Interior Design Program Ranked Among Top in Nation
Learning by Doing: Undergraduate Researchers
Wheat Disease: A Race Against Nature

Toasting a Vintage Partnership: WSU and Washington’s Wine Industry

CHEERS!
contents

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DATES TO REMEMBER

September
5 WSU vs. Stanford,
Pullman
Friends of Animal Science
BBQ & Silent Auction
9–11 Seattle Week
12 WSU vs. Hawaii,
Qwest Field, Seattle
19 WSU vs. Southern Methodist,
Pullman
26 WSU vs. USC,
Los Angeles, CA

October
3 WSU vs. Oregon,
Eugene, OR
10 WSU vs. Arizona State
Homecoming, Pullman
CAHNRS Honored Alumni &
Establishment of CAHNRS
Women’s Hall of Honor
24 WSU vs. California,
Berkeley, CA
31 WSU vs. Notre Dame,
San Antonio, TX

November
7 WSU vs. Arizona,
Tucson, AZ
14 WSU vs. UCLA,
Dad’s Weekend, Pullman
21 WSU vs. Oregon State,
Pullman
28 WSU vs. UW
Apple Cup, Seattle

President’s Associates Pre-game Receptions will be held at the CUB prior to every home football game. For more information, contact the WSU Foundation.

January
30 Celebrate Washington Wine
Chateau Ste. Michelle,
Woodinville, WA

Spring 2010
Scholarship Reception

CAHNRS Alumni
& Friends Web site:
cahnrsalumni.wsu.edu

Being as strategic and effective as possible with whatever resources we have—that will be a guiding principle for Washington State University and for the College of Agricultural, Human, and Natural Resource Sciences well into the future.

Like for most of you, the economic downturn of the past year has had serious consequences for WSU and CAHNRS. It is a difficult time for our entire country—not just our state, not just higher education, and certainly not just WSU. The $54 million cut being implemented by WSU over the next biennium has meant the painful loss of jobs and programs. But, it also has become a good lens through which to sharpen our focus university-wide and within the college.

WSU President Elson S. Floyd has continued to emphasize his commitment to CAHNRS and the agricultural industry of the state throughout the budget challenges. Academic programs in CAHNRS were reduced only about 5 percent, while the Agricultural Research Center, the college’s research arm, was reduced about 8 percent. WSU Extension, unfortunately, took a larger reduction of 20.1 percent.

Still, no organization can undergo that kind of financial change and still conduct business as usual. While it’s nearly impossible to do more with less, we certainly can do different with less. Now is when it becomes imperative to align our resources with our responsibilities as the state’s land-grant university.

For example, President Floyd reorganized by integrating WSU Extension and CAHNRS under a single administrative structure. This organization will allow us to better serve the citizens of Washington State by translating and delivering the cutting edge research being conducted at the university.

In the college, we’ve consolidated three different degree programs into a single new bachelor’s degree in Integrated Plant Sciences. We’ve also done a major overhaul on the Agricultural and Food Systems degree to emphasize the highly integrated nature of the science disciplines involved in growing food. In addition to eliminating some redundancy in course offerings, these interdisciplinary programs ultimately better prepare students with what they need to succeed after graduation.

We also are matching our resources to emerging needs in the human sciences. Faculty members in the Department of Human Development, for example, are fleshing out a program in prevention science to help identify and understand the underlying causes of issues like obesity and substance abuse.

Despite all of the fiscal challenges, great things are happening in CAHNRS. Extramural funds earned by our outstanding faculty are at an all-time high. Enrollments continue to increase, not only in the traditionally strong human sciences, but in agricultural programs as well. As you will see in the pages of this magazine, CAHNRS researchers are making profound contributions to address the many challenging food, energy, and environmental issues facing the world. The future for CAHNRS and WSU Extension is full of possibility and promise for serving key constituents—the businesses, industries and individuals of our great state.
You’re a part of the WSU family…
Is WSU a part of yours?

When you become a Legacy Associate, you make WSU a member of your family. By naming WSU in your Will or Trust, or as a beneficiary of your life insurance or retirement plan, you create a permanent legacy supporting the future of WSU.

To create your legacy at WSU, contact the Gift Planning Office at 800-448-2978 or by e-mail to gift-planning@wsu.edu.
AgWeatherNet helps growers battle crop disease

Timing is critical for controlling diseases that crop up in agriculture. Start pesticide applications too early and you can waste time and materials. Start too late and you may not effectively control diseases that threaten your crop.

Web-based computer models that integrate the relationship of climate and occurrence of periodic events in nature such as bud bursting, or flowering of plants, are helping the state’s farmers make timely decisions.

WSU scientists have created models to help manage such diseases as the powdery mildews of cherries, hops and grapes, and late blight of potato. The models are fueled by near real-time weather data collected by WSU’s AgWeatherNet system based at the WSU Prosser Irrigated Agriculture Research and Extension Center and weather predictions from the National Weather Service.

AgWeatherNet provides free, online public access to raw weather data generated by nearly 130 publicly owned regional weather stations located in 26 counties across Washington State. The stations collect and transmit weather data at 15-minute intervals (considered “near real-time”) for local growers. The system collects and publishes raw data such as air and soil temperatures, solar radiation, wind speed and humidity.

The network’s online weather information is available to the public free of charge at http://weather.wsu.edu. Users must register to access detailed information, and, once registered, they can log in at any time to view or download data.

Long-term, targeted approach best for biofuel market development

The state of Washington is well positioned to develop biofuel markets, but only if it begins now to take a long-term, targeted approach focused on advanced biofuels and potential biomass sources, according to a team of economists in the Washington State University School of Economic Sciences.

“Our analysis suggests that Washington has relatively strong long-run potential in biofuels, but weak short-run prospects,” writes a team led by economics Professor Jonathan Yoder. “However, this does not suggest waiting to put policies in place. In fact, Washington has the opportunity to ‘get ahead of the curve’ by adopting balanced and carefully targeted policies now to better position the state for biofuel markets of the future.”

In April 2007, the Washington State Legislature directed WSU to examine and analyze the economics of biofuel and feedstock markets in the state, and to recommend incentives for developing the state’s biofuel markets in ways that benefit the state’s economy, reduce petroleum dependence and reduce greenhouse gas emissions.

View the full report online at http://www.ses.wsu.edu/research/EnergyEcon.htm.

S is for “sustainable agriculture”

W is for “wheat”

Where in the World Book do you find Washington State University? First under “W” for “wheat,” and now under “S” for “sustainable agriculture.”

Stephen S. Jones, professor and scientist in the WSU Department of Crop and Soil Sciences, collaborated with Carol Miles, WSU Extension vegetable specialist, on the “sustainable agriculture” entry for the 2009 edition of the World Book Encyclopedia. Jones previously wrote the entry on “wheat.”

Both Jones and Miles see sustainability as “a process” rather than an end point. Jones says having an integrated and diverse agricultural system with profitable crops for farmers and affordable food for consumers are some of the key aspects of sustainable agriculture.

The research of both Jones and Miles includes fertilizer efficiency, perennial wheat crops, organic production with low inputs, as well as technologies that promote increased crop yields and on-farm species diversity.
Summer thyme and the garden continues to grow

BY HOLLY LUKA, MNS INTERN, WITH BECKY PHILLIPS

THE HORTICULTURE and Landscape Architecture Display Garden project has just completed Phase Two: a sun garden. Phase One, a shade garden, was completed last summer. The display garden replaces three old greenhouses razed two years ago between the French Administration Building and the Ens-minger Pavilion, on Wilson Road.

Associate Professor of Landscape Architecture Phil Waite is the project director. Waite integrates the project into his classes—allowing students to design the layout, plant vegetation and build structures for the display garden.

“It provides a fabulous avenue for students to design and get real experience,” Waite said. “It’s the difference between figuring it out on paper and actually doing it.”

Students focus on sustainability while designing and building each phase of the garden. They have kept the old concrete walls of the original greenhouse, letting them define the garden’s perimeter. Concrete greenhouse pathways were also retained, and concrete they cut out was recycled to build planters and benches.

One of the focal point of the garden’s sunny courtyard is a “human-powered” sundial made of colored stones. Caroline Pearson-Mims, garden manager for the display garden, said the students came up with the idea and design for the sundial.

“If you stand with your toes at the top of the (current) month of the year, your shadow should show the approximate time,” she said. “I also just realized the irony of the plants I just placed there—that’s thyme planted around it,” she laughed.

Washington organic acreage, sales continue to grow

THE NUMBER of certified organic farms and certified acreage in Washington State continues to grow but at a slower pace than in recent years, and gross organic farmgate sales are up substantially.

Those are among the findings reported in this year’s annual profile of the state’s organic farming sector compiled by the WsU Center for Sustaining Agriculture and Natural Resources.

According to the report, the number of certified organic farms in the state grew by 10 percent, and certified acreage increased by an estimated 18 percent between 2007 and 2008. That compares with 15 percent growth and a 27 percent increase in 2007. Gross farmgate sales increased by 48 percent in 2007 to more than $213 million.

“We always like to point out that the figures in the profile are a best estimate because of anomalies and inconsistencies in the available data,” says CSANR sustainable agriculture specialist David Granatstein, who compiled the report with research assistant Elizabeth Kirby.

The 2008 profile estimates a total of 96,139 acres of certified organic land statewide. Seventy percent of the state’s organic acreage is devoted to three crop categories: tree fruit, vegetables and forage crops for feeding livestock.

WSU researchers receive $3.3 million in USDA specialty crop grants

RESEARCHERS at WSU were among the most successful nationwide in winning competitive grants through the U.S. Department of Agriculture’s new Specialty Crop Research Initiative.

This initiative targets research funding to “specialty crops,” which include fruits, vegetables, tree nuts, dried fruits and horticultural and nursery crops. Designated research funds had not previously been available for these crops, unlike the long-established programs for commodity crops such as wheat, corn and soybeans.

WSU scientists will receive more than $3.3 million to study a variety of things including how plant nutrients affect white wine quality, new ways of thinning tree fruit, integrated pest management systems that allow farmers to use fewer pesticides, and the development of new fabric-based, degradable mulches for use as crop cover. Altogether, WSU researchers received nearly 12 percent of the funding available in this $28 million program.

“The success of WSU researchers in this first year of the Specialty Crop Grant program is strong testimony to the quality and innovation of their work,” said Ralph Cavalieri, associate dean and director of WSU’s Agricultural Research Center.
Experiential Human Development class offers students a unique experience

BY MITCH SIEBER, MNS INTERN

MOST online classes are focused on reading, communicating asynchronously, writing papers and taking tests, but Human Development 205 is not your typical online class. HD 205, Communication in Human Relations, is a life-skills enhancement course designed to help students learn how to communicate effectively while improving their teambuilding and leadership skills. Now the class is offered on-line.

“WSU’s goal is to allow for online students to have the same education as those on campus,” course instructor Becky Dueben said. “This class is a way for online students to gain experiential interaction as well as for us (in the college) to see if an online experiential class could work.”

The class follows a research-based, experiential model in which students learn through participation. Students practice communication through a series of assignments designed to bring what they are learning into their daily lives. Students then reflect and discuss these assignments and experiences with other class members online.

Human development majors Boyer and Broberg

Undergrads present adolescent sexuality research at conference

BY MITCH SIEBER, MNS INTERN

WASHINGTON STATE UNIVERSITY was well represented at the 70th Annual National Council on Family Relations Conference, as two WSU seniors presented a poster detailing their research.

Human Development majors Cheri Boyer and Danielle Broberg presented a poster on “Adolescent Identity Formation and Reasons to Have sex: Links to Sexual Risk Taking.” The two undergraduates were advised by assistant professor of human development Jenifer McGuire, who has extensive research experience in adolescent sexuality.

“Our study was a retrospective analysis of a survey that was completed in 2000 on the adolescent population in Arizona,” Broberg said. “We went back and mined the existing data.” Broberg and Boyer examined the data with a new lens, considering the association between identity development and sexual risk taking.

What the two researchers found was that intellectual sexual exploration is beneficial. Intellectual exploration means that the young person has talked about and thought through various behavioral options and understands the ramifications of his or her behavior.

“Intellectual exploration does provide protection from sexual risk-taking behavior,” Broberg said. “It is also correlated with more mature and positive responses on why adolescents would have sexual intercourse.”

Both Broberg and Boyer agree that the study was a great experience for them.

“You don’t anticipate, going into your freshman year, that you’re going to end up working on a research project, but having that challenge presented to you, going through the process, and going above and beyond just your class work has been a really good experience for me,” Boyer said.
AS PART of its Stewardship of Place curriculum, the Cle Elum-Roslyn School District is taking a walk on the wild side.

In partnership with the Washington State Department of Fish and Wildlife, and with research assistance from graduate students in the WSU Department of Natural Resource Sciences, high school students tracked cougars in order to learn how they have been affected by the rapid growth of the area just east of the Cascade Mountains.

“To have a cougar lying in front of you is so unreal,” 14-year-old Lizz Stewart told *Science World*, which recently profiled Project CAT. The Cougars and Teaching project “has been a powerful vehicle for engaging hundreds of K–12 students, teachers and community members in authentic scientific research and has fostered an understanding and appreciation for the wildlife living in their backyard,” according to the Project CAT Web site.

WSU graduate student Ben Maletzke helped lead some of the research expeditions. In trucks or on snowmobiles, researchers and students would track the wild cats. Once tranquilized, the animals were weighed and measured and blood and tissue samples were taken. Just before release, each cougar was fitted with a global positioning system collar.

What the information from the GPS collars revealed was that humans are living in close proximity with the animals. Because the cougars’ territories have remained largely stable as humans have moved in, “Cougars walk right through people’s backyards, and (people) don’t even realize it,” 15-year-old Ruben MacKenzie said.

The relationship between humans and cougars in the Cle Elum area has been relatively peaceful compared to other parts of the state. This is because the area is dominated by older cats that prevent younger, more reckless animals from moving in. In other areas of Washington, hunting has removed the older cats.

What Rob Wielgus, director of WSU’s Large Carnivore Conservation Laboratory, and others learned from the Cle Elum GPS-tracking study was that territories tend to remain stable over time. When an older male dies, another one moves in to occupy the same ground. Anything else invites head-to-head conflict with males on adjoining territories.

And although not conclusive, the Cle Elum study tends to support Wielgus’s conclusion about the stability of cougar society when dominated by older males. “We middle-aged guys lend stability to a population,” he told *Wildlife Conservation*. “Just imagine what Spokane would be like if all the men over age 19 disappeared.”

### Project CAT

#### AMDT student represents WSU at Project OR design competition

**BY PHIL CABLE, MARKETING AND NEWS SERVICES**

AS ONE OF THE TOP APPAREL DESIGN SCHOOLS IN the country, AMDT was invited by Outdoor Retailer to participate in “Project OR,” the trade show’s inaugural student design competition. The competition ran in concert with the Outdoor Retailer Summer Market 2008, one of the largest trade events of its kind, in Salt Lake City.

AMDT student Casey Stannard represented WSU in the design competition. “When I found out that I was chosen to compete, I was really excited,” Stannard said. “Then I started freaking out when I found out that there were only five participants total. That’s a big honor!”

After learning she was selected to compete, Stannard hit the books in preparation. “I’ve been reading a lot of outdoor magazines and talking to outdoor enthusiasts about what they find frustrating about their clothing, and what could be done to improve it.”

AMDT faculty members also helped Stannard get ready for the competition. “We…kicked around some possible design ideas, but it’s tricky to prepare for this sort of thing because I had no idea what I might be asked to do.”

Challenged to create a women’s garment that was innovative and attractive for the outdoor industry, the competitors had 48 hours to conceptualize, design, and build a prototype garment, which was revealed August 10. The winner was announced the same day.

“It went really well,” Stannard said. “I placed as runner up and was able to make some excellent contacts in the industry.”

And there was more to the experience than just the competition. “I did tons of networking and made great connections, learned about an area of the industry that has great growth, and also made some really great friends with the other contestants. I think I have some good prospects for jobs when I finish school!”
Colony collapse research efforts realizing results

BY KATHY BARNARD, MARKETING AND NEWS SERVICES

PESTICIDE RESIDUE IN OLD HONEYCOMB and a new microscopic pathogen quietly spreading throughout the United States are two big contributors to the mysterious Colony Collapse Disorder that has wiped out thousands of hives throughout the Pacific Northwest over the past several years, according to recent research results from WSU scientists.

Working on the project funded in part by regional beekeepers and WSU’s Agricultural Research Center, entomology Professor Walter (Steve) Sheppard and his team have narrowed the list of CCD culprits.

“One of the first things we looked at was the pesticide levels in the wax of older honeycomb,” he said. Using combs contributed by U.S. Department of Agriculture, Sheppard found “fairly high levels of pesticide residue.” Bees raised in those hives “had significantly reduced longevity,” he said.

One easy solution is for beekeepers to change honeycombs more often. In Europe, for example, apiarists change combs every three years. “In the U.S., we haven’t emphasized this practice and there’s no real consensus about how often beekeepers should make the change. Now we know that it needs to be more often,” Sheppard said.

Another aspect of Sheppard’s work—with graduate student Matthew Smart—focuses on a microsporidian pathogen known as *Nosema ceranae*, which attacks the bee’s ability to process food. Beekeepers have considered it to be “the smoking gun” behind colony collapse.

“*Nosema ceranae* was only recently described in the U.S., the first time in 2007,” Sheppard said. “But while no one really noticed, it has spread throughout the country.”

Sheppard’s earlier research found it to be a tough bug to battle. Of 24 hives checked in early 2008, *Nosema* build-up was high in a majority of the bees sampled. Beekeeper Eric Olson of Yakima said he treated the hive with a mega-dose of the antibiotic fumagillin.

“That should have caused the *Nosema* to either disappear or at least go down, but the levels went up,” he said.

The next step, Sheppard added, is to look at the link between *Nosema ceranae* and varroa mites, a common pest for honeybees.

Breeding bees resistant to *Nosema ceranae* and other pathogens is another battle front, he added. “All of this information informs our long-term breeding program.”

Sheppard said that while he and his team are making progress on finding the causes of colony collapse, beekeepers continue to lose a higher-than-normal percentage of their hives.

Research indicates that pesticide residue in old honeycomb has had an adverse effect on bee populations.

“The beekeepers I’ve spoken with are estimating a 30 percent winter loss this past year,” he said. “That’s a little bit lower than the year before, but still higher than one would expect.”

The Washington State Beekeepers Association estimates statewide losses to the disease at between 35 and 50 percent in recent years. With eight out of 10 of Washington’s most valuable crops—including apples—being “bee dependent,” Colony Collapse Disorder, left unchecked, could jeopardize the state’s agricultural economy.
WSU’s commitment to undergraduate education and research paid off recently for Kayla Ann Simons. As a result of work she did as an undergraduate, she was included as one of seven authors of an article in Nature, an international journal of science, for her contribution to a WSU research project on disease resistance in plants.

To be named as an author in a scientific journal such as Nature is a great accomplishment for anyone, especially an undergraduate, said Joe Poovaiah, WSU Regents professor and director of the lab in which Simons worked. In his 33 years in the horticulture department, Poovaiah has had many undergraduate students work in his lab, but Simons is the only one who has earned an authorship in a Nature publication.

Simons, 24, is in her second year of study in WSU’s professional pharmacy program. Five years ago, as a WSU

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**CAHNRS undergrads present research over Mom’s Weekend**

**Food Science major develops hot ice cream**

Ice cream is cold. Right? Not necessarily, according to Christina Martin Samuels, a senior majoring in food science.

Samuels has developed “Mint Blast,” a dual sensation ice cream that delivers heat via spicy mini chocolate truffles along with the traditional cold of mint-flavored ice cream.

“According to trends in the food industry, there is a large move toward ethnic flavors, bold flavors,” she said. “A love of spiciness is becoming more mainstream.”

Food Science Professor Stephanie Clark was her advisor for the project.

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**Student life guard designs “stay put” swim wear**

As a summer lifeguard much of her life, Tamara Hall knows well the dangers of “wardrobe malfunctions” while on the job.

“When you have to dive into the water, it seems that either the top comes up or the bottoms come down,” she said.

So, the junior majoring in apparel design designed and developed a “monokini” bathing suit.

“I went with a triangular shape for both fashion and fit,” she said. “It’s flattering for most figures and is more stable than a traditional one-piece or two-piece.”

Hall showed her swim suit at the annual WSU Moms Weekend Fashion Show April 3. Apparel, Merchandising, Design and Textiles Professor Carol Salusso was her mentor for the project.
Regents Scholar, she was introduced to Poovaiah at freshman summer orientation, thanks in part to her high school science teacher. Poovaiah hired her to work in his laboratory, where she primarily assisted Liqun Du, a research assistant professor working with Poovaiah.

“Liqun is very meticulous. He is very particular that things are done the right way,” Simons said. “But he was always very patient with me. He is an amazing teacher.”

Dedication to details
Simons differed from other students who worked in his lab, Poovaiah said, because she continued working for the entire four years of her undergraduate education. She also showed a commitment to quality that exceeded the average student.

“Her dedication to details got everyone’s attention in the lab,” Poovaiah said. “The challenge of complicated experiments did not scare Kayla.”

Poovaiah explains how Simons demonstrated her commitment to learning when she completed WSU’s radiation safety class, which, he said, most students shy away from. Simons not only completed the class, she earned a perfect score and became responsible for the safety of other students working with radiation in the lab.

Thirst for knowledge
Simons received funding from the WSU Center for Integrated Biotechnology, the WSU Department of Horticulture, and the National Science Foundation Research Experience for Undergraduates program to continue research through three summers. Poovaiah said he and his colleagues were able to “nurture Kayla’s talent” while she assisted them in a “world class project” on plant disease resistance.

“I got lab experience before anyone else,” Simons said. “When I took biochem, that lab experience really helped.”

The fact that students get paid to learn makes working in a university laboratory a “win-win” situation, she said. The experience taught her “critical thinking skills that transcend any discipline.”

Simons has yet to decide what she wants to do after graduating with her master’s degree in pharmacy, but she has thought about conducting research in clinical trials with human patients.

“I don’t think my thirst for knowledge will ever be quenched,” she said.

Mosquitoes + virus equals one-two punch for victims
Are mosquitoes helping viruses infect a host? Probably so, according to Júlia Pásztor, an animal sciences major with a minor in microbiology.

Pásztor measured antibody responses of domestic chickens to Avian Pox Virus (APV), which is naturally transmitted among birds by a mosquito vector.

“We want to figure out what’s going on between vectors and pathogens to infect the host,” Pásztor said. “We found that birds exposed to mosquitoes had a lower pox-antibody response,” she said. “That shows the mosquito is, in fact, affecting the birds’ ability to fight off APV.

“If we can figure out what’s going on and how it’s happening, we may be able to create preventive methods to stop the spread of such viruses in animals and humans,” said Pásztor.

Jeb Owen, assistant professor in entomology, was her mentor for the project.

Collecting cortisol to quantify quality of life
A young child’s saliva may hold the secret to determining how, or whether, family difficulties impact his or her stress levels, according to Janet Irons.

Irons, a human development major, helped collect data to measure amounts of cortisol, a stress hormone produced when individuals are exposed to psychological stress, especially in the context of interpersonal relationships.

Working with 37 families with three- to seven-year-old children, Irons collected data on children’s cortisol levels through a salivary sampling method called “The Spitting Game.” Parents also filled out questionnaires about their marital and emotional functioning, parenting, and their child’s personality and behavior.

Preliminary results show higher levels of cortisol in children rated by their parents as expressing more anger and frustration. Patricia Pendry, assistant professor of human development, was the advisor for the project.
INDIVIDUAL STUDENTS as well as the overall program of WSU’s Interior Design Department have received national accolades recently, adding to the department’s already strong reputation.

DesignIntelligence, a bimonthly journal for architecture and design professionals, included WSU in its 2009 list of best interior design schools. In its first time on the list, WSU’s graduate program in interior design, based at WSU Spokane, was ranked ninth among all interior design programs in the United States.

Rankings are based on surveys of professional design firms around the country. The top-ten placement shows that WSU graduates are excelling in their profession.

“What the ranking suggests is that our students are doing extremely well in entry level positions,” said Associate Professor and Department Chair John Turpin.

The ranking also shows the growth of the program in Spokane. “We have had the program for seven years and enough students have now gone through the program to where people are starting to take notice,” Turpin said.

Judges in national interior design competitions also have taken note of WSU student expertise. Four Cougars earned honors in the Retail Design Institute Student Design Competition, and another WSU interior design student, Cassidy Lange, placed second in the International Interior Design Association’s Sustainable Design Competition.

Chung Yung (Simon) Ho, Gwen McConn and Natasha Palewicz placed first, second and third, respectively, in the RDI competition, which asked students to design a 40,000-square-foot, high-end grocery store that would compete with businesses like Whole Foods groceries. Meagan Phillips received an honorable mention in the same competition.

Judy Theodorson, WSU assistant professor of interdisciplinary design and the director of the integrated design lab, used the RDI competition as a final project for her capstone interior design studio class. The 18 students in the class started by spending three weeks researching food, grocery store trends and retail behavior. They read “The Omnivore’s Dilemma,” WSU’s Common Reading book, as part of their research. They also talked about issues and topics regarding food in order to get a grasp on the background of the grocery store industry. From there, the students came up with their own proposals. Theodorson commented on them, and then students began developing final interior and exterior designs.

All of the students in Theodorson’s class entered the competition, which drew a total of 72 entries from around the nation. This was the fourth year that her class had entered the RDI competition, and every year someone has placed. This year, however, was the first time WSU students took all three cash prizes as well as one of the two honorable mentions.

“The class was uniformly strong,” Theodorson said. “It was a great class.”

Cassidy Lange also was a member of that design class. After submitting her grocery store design to the RDI competition, she tweaked the design slightly and submitted it for the International Interior Design Association Sustainable Design Competition. She placed second.
Alumna at Work: Nicole Cecil, Interior Design 1996

Nicole Cecil (Interior Design ’96) was in the first class of students to graduate from WSU’s Interdisciplinary Design Institute in Spokane. Studio-ready, Cecil went to work for the University of Idaho in Moscow, in University Residences and Architectural and Engineering Services after graduation.

Cecil, who now works as an interior designer with the Boise-based architectural firm CSHQA, said that studying at the IDI “completely changed the direction of my career. I thought I would be more residential in focus, but working with the IDI team was completely instrumental in where I am now.”

Cecil is a project manager with CSHQA focusing on commercial projects such as airports and corporate and government buildings. Recently, she and her team won an award for a potential LEED-CI Gold Certified Ada County government building improvement project.

The U.S. Green Building Council’s Leadership in Energy and Environmental Design program is a set of criteria which, when met, reduce a building’s ecological footprint. LEED is the “nationally accepted benchmark for the design, construction and operation of high performance green buildings,” according to the U.S. Green Building Council’s Web site.

When it comes to the interiors of buildings, materials selection is key to sustainability. Cecil said that working in the materials library at WSU Spokane prepared her well for the position she now holds.

Long nights in the studio also prepared her to be studio-ready, as did a couple of senior-year projects. One of those projects, developing a plan for low-income housing in Spokane, involved collaboration between studios—a typical real-world scenario where parts of complex projects are jobbed out to individual firms.

Now married and the mother of two daughters, Cecil said interior designers still struggle with a deeply rooted preconceived notion about what they do.

“People think we’re decorators. Today I wrote technical specs—it’s what we spend a great deal of time doing.”

Design, in other words, is in the details, and the details are in building codes, architectural plans and a deep knowledge of which materials to use to give the client the best fit in terms of aesthetics and sustainability.


Luke Van Duyn (’07) mixed modern and classical elements along with a few Asian accents to create a House of Yue-Sai look for the dynamic entrepreneur’s new home interiors business.

People magazine called Chinese-American Yue-Sai Kan “the most famous woman in China.” The owner of the largest cosmetics company in China, she recently turned her eye to the interiors of homes.

Yue-Sai hired Van Duyn to lead this new endeavor. Working with a staff of 10 interns and designers, in seven days Van Duyn whipped together a tradeshow booth for the International Shanghai Interiors Expo.

The show included companies such as Versace Home and Roche Bobois.

The results were spectacular for both the House of Yue-Sai and for Van Duyn. He and Yue-Sai have been featured on CNN, Luxury Items and Spaces, and the Chinese program Young T.V. and in an interview with GQ.

“Luckily,” Van Duyn said, “some of my connections in Shanghai include furniture manufacturers, so favors were definitely pulled.” It was all worth it, though, as both the public and the profession were impressed by the results. “Yue-Sai herself was blown away!”

Photos top to bottom: Corporate interior designed by Nicole Cecil. Nicole working on design specs as a project manager with the Boise-based architectural firm CSHQA. Tradeshow booth by Luke Van Duyn for the House of Yue-Sai home interiors. Van Duyn at the International Shanghai Interiors Expo.
Crop Disease is a fact of life for eastern Washington wheat growers. Diseases with curious names such as Strawbreaker foot rot, Cephalosporium stripe and Barley yellow dwarf can cause a significant reduction in yields and turn a good year into a disaster for farmers.

Ten to 15 wheat diseases occur somewhat regularly in the state, according to Tim Murray, a WSU plant pathologist, but only a handful are of concern year-in and year-out.

Natural Conditions for Disease

Fungal diseases are the most common, he said. The primary factors influencing their development are temperature and moisture. Variations among the state’s climates dictate where diseases are most likely to occur, according to Murray.

“The Cascades and west is a cool, wet climate. Once you get east of the Cascades, the rain shadow effect takes over,” he said. “In the Yakima and Hanford areas, it is warm and very dry, and as you move east, you pick up an inch of rainfall about every 10 to 15 miles. Average daytime temperatures become cooler as you move east from the Columbia Basin. That will determine which diseases will occur and where.

“Like I tell my class,” he pointed out, “the only rule in biology is that there is an exception to every rule. Our climate is variable enough that you can find most of these diseases in most of the producing areas in any given year, if you look for them.

“We’re mostly dealing with soil-borne pathogens in this part of the country because our climate is so arid,” Murray said. “By the time our climate warms up enough for leaf rust or stem rust to be a problem, we’re too dry.”

Stripe rust, which is caused by the Puccinia striiformis fungus, is the exception. The disease shows up as fine lines of orange pimple-like pustules arranged along the veins of wheat leaves. Unchecked, the disease can reduce yields by 30 percent to 60 percent on susceptible varieties. Growing a resistant variety and timely applications of fungicides can stem the outbreak.

“In mild winters,” Murray said, the fungus “will overwinter on wheat in parts of Washington or Oregon where it is mild enough for the pathogen to survive. Then rust spores move east on prevailing winds. In the spring when the temperatures are cool or when there are a lot of dewy nights, there’s enough moisture for the pathogen to develop.”

In February, an international team of researchers, including Xianming Chen, a USDA Agricultural Research Service plant pathologist stationed at WSU, announced discovery of a gene in a wild wheat found in Israel that provides partial resistance to stripe rust. When combined with other genes, it is expected to provide sufficient protection in commercial wheat.

Some diseases, like Common bunt, have been reduced to a minor concern, thanks to advances in science. The disease, also known as stinking smut for its rotten fish odor, once plagued the region.

“This part of the Palouse is the smut capital of the world because we have conditions that are very favorable for that disease,” Murray said. “It is caused by a soil-borne fungus that infects the seedlings. It works its way up through the inside of the plant and infects the ovaries...and the developing seeds. It turns them into a black dusty material.”

Pathogens’ Progress

“There is a discussion of the evolution of plant pathogens within the world of plant pathology,” Murray said. “Are they opportunistic? Were they here and not causing much damage on wild plants and then jumped to crop plants? Strawbreaker foot rot was discovered in the region not long after pioneers broke sod to plant wheat, so we know that one has been around since the beginning of wheat production in the area.”

“One thing we know is that when people have migrated around the world, they took with them their favorite plants and animals as well as the pests those plants and animals carried.”

Some fungal organisms are so widespread, they are considered a natural component of the soil, Murray said. “We only become aware of them when we change conditions that favor them.”
Tim Murray, a WSU plant pathologist, is collaborating with scientists around the world to address UG99, the latest threat to world wheat production.

UG99 is a virulent new race of stem rust found in research plots in Uganda in 1999 that has been able to overcome resistance genes bred into wheat varieties commonly planted around the world. Some estimates say that 80 percent of all wheat varieties planted in Asia and Africa are susceptible.

Since 1999, the disease has spread to Kenya, Ethiopia and the Sudan as well as to Yemen and now Iran. Prevailing winds are expected to carry the spores of the fungal disease to Pakistan and India and, eventually, the United States.

“It’s a concern in the United States because a large percentage of our varieties are susceptible,” Murray said. “The last major epidemic of stem rust in the United States was in 1954.”

Throughout history, stem rust has caused major famines around the world and major losses in grain production in the United States in 1903, 1905 and from 1950 to 1954. UG99 is of concern especially in the Midwest where the climate favors the disease. Stem rust is not a major concern in Washington because it requires summer rainfall, warm days and warm nights to thrive.

Murray is chairing a committee of land-grant university and government scientists devising a recovery plan, should UG99 be introduced to the United States. His committee is preparing a brief on UG99 for policymakers and is making plans to conduct surveillance for the disease. Surveillance will include planting and monitoring trap plots of vulnerable varieties around the United States. Based on the disease’s current locations, according to Murray, it should take about 10 years to reach the United States following natural pathways.

“The real challenge will be to know when it arrives,” Murray said. “You can’t tell UG99 apart from any other stem rust by looking at it. They all look alike.”

Researchers already have identified sources of genetic resistance to UG99 and breeding lines with resistance are in development, but it will take several years of breeding to put seed with multi-gene resistance into the hands of farmers.

Also known as black rust, stem rust is caused by the fungus Puccinia striiformis, named for the rust-colored, pimple-like pustules that develop mainly on the stem of the plant and produce black spores. The disease can weaken stems, resulting in lodging (collapse of the plant) which causes significant losses in yield.

In 2005, Norman Borlaug, Nobel laureate and father of the Green Revolution, compared the dynamics of a rust epidemic to a forest fire.

“Once started, both are difficult to stop,” he said. “The prospect of a stem rust epidemic in wheat in Africa, Asia and the Americas is real and must be stopped before it causes untold damage and human suffering.”

Plant Health Care

Murray said the first half of the 20th century was consumed with efforts to control the yield-cutting disease. “A lot of things happened after World War II when agricultural chemicals came into use and scientists discovered that a combination of seed treatments and disease resistance bred into wheat varieties were effective in controlling Common blunt.”

The cheapest and most desirable defense against disease is bred-in genetic resistance. Seed treatments, rotations that break disease cycles, and fungicides are other disease management options used by farmers.

But scientists can’t rest on their laurels, because pathogens evolve. “We are directing the evolution of the plant through plant breeding programs and fungicide applications,” Murray said. “The pathogen is doing it (evolving) on its own. It is responding to what we put out there.

“In biology, the driving force is reproduction,” he said. “If you can’t reproduce your species, you go extinct. It’s very much a natural process.”

Ravi Singh, a wheat breeder with Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT), provides an overview of the center’s wheat breeding programs during a tour of research plots at Obregón, Mexico.

Hundreds of scientists from around the world gathered at Obregón, Mexico, in March to discuss wheat health issues and the threat posed by UG99, a new strain of stem rust.
CHEERS!
SOME THINGS JUST GO TOGETHER. They complement each other’s best qualities to create something greater than the sum of their parts. The result? A perfect pairing.

Such is the case with Washington State University and the Washington State wine industry. For more than 60 years, WSU scientists have joined forces with wine grape growers and winemakers in the state to create the second largest wine industry in North America and an up-and-comer in international wine circles.

From modest beginnings rooted in cutting-edge science and hard work, Washington’s wine industry has grown into a $3 billion-per-year enterprise. It includes more than 600 wineries and 11 distinct, federally-designated American Viticultural Areas, or AVAs. And every year, especially since the 1970s, its reputation and recognition for quality increases.

WSU’s role in the state’s wine industry has grown as well. WSU offers the only four-year degree in viticulture and enology in the region, preparing future leaders for the industry in state and out. Its scientists conduct research on everything from tannins and grape-leaf roll to yeast viability and deficit irrigation in vineyards. WSU also hired one of the world’s premier wine scientists, Thomas Henick-Kling, to lead its program in the 21st Century; he has spent the past several months visiting with industry representatives in every wine-growing area of the state.

“I am impressed by the enthusiasm and the energy of the people I have met all across the state for continuing to refine and expand their industry,” he said. “Even with its success over the past 30 years, the industry remains dynamic and forward looking, and there is plenty of opportunity for significant continued growth.”

(continued on page 17)
Washington wine industry blooming

New Washington Viticulture Areas

Joan Davenport, a soil scientist at the WSU Irrigated Agriculture Research and Extension Center in Prosser, helped research and write the petition that established Snipes Mountain as Washington’s tenth federally recognized American Viticultural Area. Establishment of the Snipes Mountain AVA in Yakima County was published in the Federal Register on Jan. 21, 2009, and became official Feb. 20.

Davenport assisted Todd Newhouse, owner of Upland Estates Winery, with the petition by conducting geological research and providing information about the area’s history and more. Snipes Mountain has had vineyards since 1914, according to Ron Irvine’s authoritative The Wine Project: Washington State’s Winemaking History.

Alan Busacca, a former WSU professor and owner of Vinitas Vineyards Consultants who has worked on petitions for several other Washington AVAs, told Ingrid Stegemoeller of the Tri-City Herald that the new AVA is “a big deal, because as the industry moves forward one of the things we hope to accomplish is to develop some geographic branding.”

Several features distinguish eastern Washington, including its location in the rain shadow of the Cascade Range and the effects the Lake Missoula floods had on the soils where many grapes are grown, Busacca told the Herald. But on Snipes Mountain and neighboring Harrison Hill, the soils are different. Those areas’ soils are dominated by fist- and melon-sized gravel deposited by the ancient flow of the Columbia River.

“It’s a modest-sized hill that sticks up right in the middle of the Yakima Valley,” Busacca said. “The climate is different than surrounding lands, and the geology is different.”

“The proliferation of AVAs really speaks to the growth of the Washington wine industry,” Robin Pollard, executive director of the Washington Wine Commission, told the Herald. “We put so much emphasis on the climate and the soils of the various regions within the state. It gives us more to talk about when we’re describing the wines from Washington.”

In May 2009, Lake Chelan AVA became Washington’s 11th viticultural area. The Lake Chelan AVA is distinct because of its elevation, much higher than its neighbors to the south, and its proximity to a Lake Chelan, a large, deep body of water that moderates the local microclimate through the “lake effect.” Large lakes absorb summer heat and then release it during the fall, thus dampening the effect of frost and prolonging the growing season. The soils in the newest AVA are distinct, too, giving grapes the complex structure prized by winemakers.

Washington Wineries Top 600

Just 10 years ago, Washington’s wine industry was a niche industry with a loyal fan base for its 160 wineries. Now, Washington has licensed over 600 wineries, marking a nearly 300 percent increase in just a decade.

“It’s great news,” said Robin Pollard, executive director of the Washington Wine Commission. “The natural evolution of our industry, the growth, is indicative of the fact that many people recognize the quality of the grapes that we grow here in Washington, that then can be made into world-class wines.”

Valued at about $3 billion annually, Washington’s wine industry has seen steady growth in the past two decades. The number of wine grape plantings increased from 24,000 acres in 1999 to an estimated 33,000 this year.

Growth in Washington’s industry is expected to continue, said Vicky Scharlau, executive director of the Washington Association of Wine Grape Growers.

“There’s been a nice offset between supply and demand,” she said. “The growers have been very cautious, and we have been very diligent in the message to growers that unless you have a contract with a winery, we don’t recommend planting more acreage.”

Through its research, extension and education, WSU has been a key advocate of the growth of the Washington wine industry since the 1930s.

To learn more about WSU’s ongoing role in the industry, visit: http://wine.wsu.edu/history.html.
Annual wine auction builds stronger WSU Viticulture and Enology Program

BY DENNY FLEENOR, MARKETING AND NEWS SERVICES

During the 2009 “A Celebration of Washington Wines” dinner and auction in January, glasses were hoisted to toast the bid that put net proceeds raised in the event’s eight years, over the $1 million mark. Proceeds from the annual gala helped launch, and continue to support, Washington State University’s Viticulture and Enology Program. For the past two years the proceeds have been dedicated to helping establish an endowed chair to lead the program. In March, internationally known enologist Thomas Henick-Kling assumed that position.

This year’s gala at the Chateau Ste. Michelle Winery in Woodinville, Wash., brought in a total of more than $180,000 in auction proceeds, ticket sales, sponsorships and donations, which was more than enough to surpass the $1 million net proceeds milestone.

Cougar alumna Nancy Harnasch, who has chaired the auction’s volunteer organizing committee since the beginning, says the auction started as a one-time event. She credits Ste. Michelle Wine Estates President and CEO Ted Baseler with getting the ball rolling.

“We’d had previous events, including black-tie dinners at the winery, as ‘friend-raisers’ for the university, not fundraisers,” Harnasch recalls. “At the time, the state was moving to authorize viticulture and enology programs at WSU and in the community college system, and Ted offered the winery for a black-tie dinner and auction to raise funds to help launch the program.”

Harnasch says organizers anticipated that event might raise as much as $25,000 to buy equipment for the fledgling program.

“We raised over $120,000, in part thanks to a significant contribution from Chateau Ste. Michelle,” says Harnasch, “and we were blown away. (Then-WSU President) Lane Rawlins loved the event and said ‘Let’s do it annually,’ and Ted was immediately on board.”

Harnasch credits the time and energy contributed by volunteers, both at the event and serving on the organizing committee, for the event’s success and longevity.

“These committee members are engaged, active and productive, and deserve a very big thank you for contributing to eight successful auctions,” she says.

The planning is already in the works for the 9th annual “Celebrate Washington Wine.” Once again, it will be held at the Chateau Ste. Michelle Winery in Woodinville, this time on Saturday, Jan. 30, 2010.

More information will soon be available at http://www.wineauction.wsu.edu.
WSU features the largest experimental, non-commercial winemaking facility in the Pacific Northwest.

The research winery, located at the WSU Irrigated Agriculture Research and Extension Center in Prosser, has a production capacity of about 5,000 gallons. The new facility was designed by enologists James Harbertson and Kerry Ringer, scientists in the WSU Department of Food Science. The facility will be used to conduct research in support of the region’s rapidly growing wine industry.

“We designed the winery for small-lot, research-scale production,” said Harbertson. The winery will produce multiple small lots of wines under controlled and reproducible conditions, said Harbertson and Ringer.

“We spent about six months designing the facility,” said Ringer. “We wanted to make sure that we had the capability to conduct the research the industry needs, so that meant ordering a lot of custom-made equipment.”

The experimental winery includes 73 stainless steel fermentation tanks that are temperature controllable. The tanks range from 26- to 260-gallon capacity. Temperature in the tanks is monitored and controlled by a Web-based system called TankNET.

With the new winemaking facility, Harbertson said, “there are lots of questions we can now address. But our main issues are pretty much all practical. How does one piece of equipment affect the winemaking process compared with another? And how do viticultural practices affect grape quality and, in turn, wine quality?”

“The winemaking facility represents another leap forward for viticulture and enology research at WSU,” said Dan Bernardo, dean of the College of Agricultural, Human, and Natural Resource Sciences. “By conducting winemaking research at this level of detail, we’re going to be able to support the state’s premium wine industry in new and exciting ways.”

Currently, Harbertson is collaborating with WSU viticulturist Markus Keller to compare wines made from own-rooted versus grafted vines. The majority of Washington grape vines are own-rooted. California and other wine regions typically use disease-resistant rootstock to which varietals are grafted. Washington producers have not needed to graft vines as root diseases are, so far, not a problem in the state.

“We want to be prepared if there is an invasion,” said Harbertson. The researchers plan to make wine from grapes from both own-rooted and grafted vines that are grown in the same vineyard. Chemical analyses and sensory evaluation methodologies will be used to compare the wines. Currently, the team is working with Merlot, Chardonnay and Syrah varietals.

The scientists wasted no time in getting winemaking research projects up and running. WSU viticulturist Markus Keller and his team harvested half a ton of Chardonnay grapes from WSU’s research vineyard early one October morning. Within a few hours, the grapes were pressed and left to settle overnight. The next morning, yeast was added and a new series of winemaking experiments was under way.
“Dr. Henick-Kling is a scientist, educator and advocate of the highest caliber,” said Dan Bernardo, dean of the WSU College of Agricultural, Human, and Natural Resource Sciences. “He has led the development of viticulture and enology programs at Cornell and in Australia, and is therefore the perfect person to take the WSU program and Washington’s burgeoning wine industry to the next level.”

Rick Small, former president of the Washington Wine Commission, agreed. “I’m delighted that we have someone of Dr. Henick-Kling’s caliber on board at Washington State University,” he said. “His reputation speaks for itself, and his international expertise will certainly benefit the Washington wine industry and broaden our perspective. Any time you can attract someone with experience from outside, you move the program forward with great strides.”

Henick-Kling hit the ground running in March and is progressing quickly on a strategic vision and plan for the programs’ future.

“For a long time, I have admired the Washington wine industry in its vision and enormous potential for quality and growth,” he said. “In the past, WSU has had some outstanding individual scientists, now the WSU viticulture and enology program is a group with much talent that needs to find a common direction. I am excited about the possibility of being able to add strength to the V&E program and support the Washington wine industry.”

The new director’s international experience already is benefiting WSU’s program. He is working with former university colleagues as well as wine growers and enologists in Germany, France and Australia on developing research collaborations and student internships. “While the students may leave the state for awhile, many of them will return to Washington with a new perspective they can apply to their work here,” he said.

Henick-Kling said the joint location of the WSU wine program at the Pullman campus and at WSU Tri-Cities is ideal for students and faculty researchers.

“The location is fantastic,” he said. “Almost 90 percent of the Washington wine industry is within an hour’s drive of the Tri-Cities campus, so our students are in the middle of a major wine producing area. The involvement by industry is just tremendous.”

If you’re interested in another way to support WSU’s Viticulture and Enology program, how about dinner out with a nice bottle of wine?

In 2008, Chateau Ste. Michelle Winery in Woodinville launched an annual program through which a portion of their wines sales at participating restaurants is contributed to the WSU V & E program. A total of 123 restaurants joined last year’s effort, raising $40,000 to fund scholarships, research and equipment.

The program is the brainchild of Ste. Michelle’s director of global accounts, N.W. region, Joe Aschbacher (Hospitality, ‘87). Aschbacher says when he approached Ste. Michelle Wine Estates President and CEO Ted Baseler (Communications, ’76) with the idea, “he really sunk his teeth into it.”

The concept is simple. Ste. Michelle provides marketing materials and information to participating restaurants about the WSU program that is conducting research and training the state’s next generation of grape growers and winemakers. The winery also provides training to participating restaurants and donates a portion of the sale of each bottle or glass of its wines to the WSU program.

Aschbacher says the fundraising promotion this year will run from Oct. 1 through December, and he expects an even wider range of restaurants will participate.

“Last year most participating restaurants were on the west side, and this year we’re planning to involve eastern Washington restaurants,” he says. “Raising funds for scholarships really hits home with the restaurants because they see that as an important community benefit,” he says. “We have so many price points among our wines that it is possible to get restaurants at every level involved.”

Aschbacher says the program involves a lot of staff training so that hosts, servers and sommeliers in the restaurants can talk knowledgeably to customers about the WSU program.

“It’s nice to raise funding, but it’s really great to increase awareness of the WSU program and its role in supporting the Washington wine industry,” says Aschbacher.
Weekend boot camp for aspiring winemakers

BY BRIAN CLARK, MARKETING AND NEWS SERVICES

EVERY YEAR, students from all over the U.S. travel to WSU’s Irrigated Agriculture Research and Extension Center in Prosser to participate in a weekend-long “wine camp.” The weekend intensive for students enrolled in WSU’s Enology Certificate Program gives them a close-up view of the inner workings of Washington’s booming wine industry as well as hands-on experience in mission-critical jobs such as filtration and bottling.

Students tour wineries large and small; participate in filtering and bottling at Thurston Wolfe, Vine Heart and other wineries; and learn about wine filtration from industry experts.

The weekend camp is a component of WSU’s online viticulture and enology professional certificate programs. The viticulture and enology courses are separate two-year programs that educate students in all facets of grape or wine production through online lessons and hands-on experience. The programs are tailored for people interested in wine-grape growing and wine-making, but who are not interested in obtaining a college degree.

Both programs offer a balance of online interactive learning and hands-on activities at the Research and Extension Center in Prosser to give students industry-relevant knowledge and experience. In the grape production class, for example, students study pruning online and then physically prune vines.

In response to demand from students and the burgeoning Washington wine industry, the certificate programs now start yearly.

“We used to start the programs every two years, but the demand was so high that we had to come up with a way to meet the needs of students and the industry,” said Mercy Olmstead, former director of WSU’s Professional Certificate Programs in Viticulture and Enology. “The best way to do that was to run both programs concurrently instead of consecutively.”

The result is that 30 additional students are able to enter each program every year. In turn, more graduates of the program will be working in the industry sooner.

“Originally, this program was offered in a classroom setting, but we created the online courses to give more people a chance to learn from highly educated professionals, and it keeps growing,” said Olmstead.

For more information about the professional certificate programs as well as the do-it-yourself options, please visit: http://winegrapes.wsu.edu/certificates.html.

Online Education Options

In addition to the two-year professional certificate programs in viticulture and enology offered by WSU, the same courses are also available individually through a self-directed option. Students who go this route will view the same presentations and get the same valuable information as the certificate program students, but without the assignments, exams, instructor contact or hands-on weekends.

This “do it yourself” option is for those who want the information but are not interested in the full certificate due to time or resource constraints, or who simply want to round out their education in certain areas. The courses can answer questions about setting up a winery and the science of winemaking, as well as most aspects of viticulture including irrigation, pests and diseases, soils and nutrients, grapevine anatomy, and trellising and pruning.

Dentist now extracts wine from grapes

BY BETHANY CARPENTER, MARKETING AND NEWS SERVICES INTERN

JON MARTINEZ has a passion for making quality wine. In 2007, the desire to pursue that passion led him to enroll in WSU’s Enology Professional Certificate Program.

Martinez already holds degrees in biology and chemistry from the University of Kansas, and a doctorate in dental surgery from the University of Iowa. He owned a dental practice for nine years in Overland Park, Kan., before deciding to move to Prosser, Wash., last year to start his own winery.

“I knew I had to find the perfect place to achieve my dream,” Martinez said. “Years ago, I had the pleasure of tasting some Syrah and Viognier wines from Washington State. I was surprised. I found the fine balance of elegance and richness to be very similar to what I experienced in France.”

WSU’s enology program, Martinez said, helped him focus on the science side of wine production and look more analytically at the winemaking process. But he said some aspects of winemaking just come with practice and experience.

“Winemaking is something you are learning all your life,” Martinez said.

Martinez’s winery, Maison Bleue, is focused on Rhone grape varieties from southern France. One of his most popular wines is a 2007 Maison Bleue La Vie Douce Roussanne, a rich wine that blends the aromas of honey and apricot with the sweet flavors of pineapple and pear. He also released two new wines in March, a 2008 Notre Vie Viognier and a 2008 Au Contraire Chardonnay. The Au Contraire is the first wine to be made of grapes from Martinez’s own French Creek Vineyard. Its grapes come from the nine acres of Chardonnay among the 21 acres he owns. Martinez said he plans to plant Grenache and Syrah as well.

“This is my future,” Martinez said. “I came here to be the best.”

Jon Martinez
Finding an easier way to diagnose virus-infected grapes

BY DENNIS BROWN, MARKETING AND NEWS SERVICES

WINE GRAPES are susceptible to a multitude of viral diseases, more than any other perennial fruit crop. One of the most vexing is grapevine leafroll, which exhibits different symptoms in white and red wine-grape varieties and may not show any symptom at all in table grapes (the kinds of grapes we eat).

When severe, grapevine leafroll reduces yields by about 50 percent, negatively impacts grape quality and shortens the lifespan of the vine. There is no remedy for this baffling disease. It can be eradicated in the vineyard only by pulling and replacing the vines—an expensive proposition for a perennial crop.

Short of laboratory testing, there is no way to know for certain if a suspect vine is infected, because symptoms of leafroll disease overlap or mimic other grapevine disorders. Testing can become an expensive proposition due to costs associated with virus diagnosis.

In the not-too-distant future, grape growers may detect virus-infected grapevines in the field using a portable sensor that evaluates changes in the light reflecting properties of leaves.

Eileen Perry and Francis Pierce, who are, respectively, the former assistant director and the director of WSU’s Center for Precision Agricultural Systems, analyzed data collected with a spectral radiometer from leaves of two red grape cultivars showing symptoms of grapevine leafroll disease in Washington. The reflectance properties were compared with leaves from non-infected plants.

“We have found in two grape varieties—Merlot and Cabernet Sauvignon—that there are certain differences in the wavelength of the spectrum that are unique to leafroll disease,” said WSU grape virologist Naidu Rayapati. “We have also found a good correlation between results from molecular diagnosis and leaf reflectance properties.”

The scientists have since begun analyzing light reflectance data for Chardonnay grapes. They hope to extend these studies to develop a comprehensive database on changes in leaf reflectance properties due to leafroll disease in different wine grape varieties and to evaluate this information for applications in field-based disease diagnosis.

Even if we can achieve 80 percent success with this kind of technology,” Rayapati said, “it will help us tremendously in terms of cutting the cost and speeding the process of virus diagnosis.”

Eileen Perry and Naidu Rayapati examine a grape leaf for symptoms of disease using a spectral radiometer.

CERTIFIED PLANTING STOCK: What is it? And why you should care.

BY BRIAN CLARK, MARKETING AND NEWS SERVICES

PLANTING CERTIFIED GRAPE STOCK is a vineyard manager’s best insurance against the introduction or spread of grape pathogens. Certification is assurance that the vine passed a rigorous testing process confirming it is free of pathogens identified by Washington State’s administrative codes.

The WSU-operated NorthWest Grape Foundation Service is part of the National Clean Plant Network, a nationwide effort to supply agricultural producers with clean—that is virus-free—plant material. Considerable scientific expertise and rigor is needed to thoroughly screen plant material for viruses and to propagate the clean material.

The certification process starts when selected plant material is vigorously tested for specific pathogens. If the selection is found to have one or more listed pathogens, propagation methods are undertaken to remove those pathogens. Once laboratory testing and biological indexing show the tested selection is free of the pathogens, the selection is given “registered release” status and released to certified commercial nurseries throughout the Pacific Northwest where it is grown for sale to producers.

When a grapevine is purchased as a certified nursery plant, it comes with a state-issued certification tag that represents a process outlined in the state’s administrative codes and administered by the WSDA. Inspectors from the WSDA routinely monitor the mother blocks for pathogens during the season, while the NorthWest Grape Foundation Service ensures that the material provided has tested free of specific viruses.

If unwanted pathogens are introduced via infected, non-certified vines, elimination becomes very difficult, if not impossible. Pathogens can spread throughout the planting and into adjacent blocks, causing negative effects on fruit quantity and quality and subsequent economic grief.
WSU Enologist James Harbertson and his colleagues have sampled 1,300 red wines, half of them from Washington. The research team didn’t swirl, sniff, sip and spit, but rather collected wine samples with a Pasteur pipette at tastings or via winery donations. The samples were then brought to Harbertson’s lab and analyzed with a spectrophotometer.

The result is the most comprehensive database of tannins and other phenolic compounds in red wines to date. The database will enable winemakers to better manage their enological practices. The results of the eight-year study are published in the June 2009 issue of the American Journal of Enology and Viticulture.

While at UC Davis, Harbertson, along with Doug Adams, pioneered a relatively inexpensive method of tannin analysis, known as the Adams-Harbertson tannin assay. The assay has been commercially available for several years.

The new study establishes benchmarks for tannin levels in red wines made in Washington, Oregon, California, France and Australia. Tannins give red wines, strong tea and pomegranates and other fruits their characteristic astringency and mouth feel. And tannins, unlike other phenols found in wine, remain relatively stable over time, making them excellent candidates for comparative analysis. Sensory scientists have established a standard, qualitative vocabulary for the description of astringency in wine; Harbertson and his colleagues think it may now be possible to connect quantitative data and other wine chemistry components to arrive at a more complete description of astringency.

Depending on the origin of the grapes in a particular wine, tannin levels varied significantly (up to 33 fold), but the mean level within each wine type (e.g., Cabernet Sauvignon, Syrah, Merlot, etc.) was about the same.

“Despite all that variation, you could still distinguish, more or less, cultivars,” Harbertson recently told Wines & Vines magazine. “I think winemakers and wine drinkers more or less understood which cultivars were more tannic by tasting; now they actually have numbers.”

The results will allow grape growers and winemakers to compare their products to a standard, although the findings don’t directly indicate the effects that viticultural or winemaking practices might have on tannin concentrations.

“The amount of tannin that gets into wine is dependent on how you deal with the fruit in the winery, so I can’t say whether that difference is due to the tannin in the fruit or the way (the winemakers) make the wine,” Harbertson told Wines & Vines. “All it’s saying is wines from that place tend to be tannic. It doesn’t mean that the fruit’s tannic—it means that those wines are.”

Harbertson is based at the WSU Irrigated Agriculture Research and Extension Center in Prosser. There, research is ongoing to determine what effects viticultural and enological practices have on tannins as well as terpenes, the compounds that give wines their “nose.”
Water, water everywhere?

BY BRIAN CLARK,
MARKETING AND NEWS SERVICES

Deficit Spending

“I wanted to focus my research on irrigation,” said recently graduated Master’s student Marco Biondi. “Water is the big thing, especially in the grape industry—for one of the world’s most widely grown crops.”

Biondi hit U.S. shores from his native Italy a few years ago, proceeded to master English, and then to work with WSU viticulturist Markus Keller on an extensive Master’s of Science research project.

In much of Europe, Biondi explained, it’s illegal to irrigate wine grapes after veraison—the change of color that occurs in grape berries as they ripen. Because of ancient traditions, rather than science, growers aren’t allowed to irrigate post-veraison for fear of diluting Brix (the measure of the fruit’s sugar content).

For over 20 years, the working assumption has been that berries are hydraulically isolated during ripening, that is, that no water from the roots enters the berries. But assumption often wings far from fact, so Biondi and Keller set out to track the scientific truth of the matter.

Working with both Vitis vinifera (wine) and Vitis labruscana (table) grapes, Biondi performed a variety of controlled greenhouse experiments. He used high-tech sensors to measure change in berry size and color as the fruit ripened. He grew vines in a pressurized system in order to determine how water circulates within the plant and its berries. He put dye in the water to visually inspect circulation.

The results of Biondi’s experiments are startling and fly in the face of viticultural tradition.

“We proved that berries are not hydraulically isolated during ripening,” he said. Indeed, Biondi’s experiments show that berries absorb water in a variety of ways, including through the skin and not just through the root system, as commonly believed.

“Late season irrigation doesn’t decrease Brix,” Biondi said, “but irrigation does increase photosynthesis in the leaves, and photosynthesis in turn increases Brix.”

Markus Keller, Biondi’s advisor, said that this research will certainly result in changes in textbooks, which have long taught that deficit irrigation (starving the plant of water after veraison in order to increase Brix) is the way to go.

“We can now tell growers to keep irrigating very late in the season or maybe even increase water application,” Keller said. “They can maintain their crop at the same time as attaining the same quality. This could mean millions of dollars for Washington growers alone.”

Please Adjust Your Monitors

Contrary to the old saying, water definitely isn’t everywhere. In agricultural enterprises, where every drop of input is precious, the question is whether scarce water is being applied in the right place at the right time.

For soil scientist Joan Davenport, based at WSU’s Irrigated Agriculture Research and Extension Center in Prosser, the answer is a definite maybe. Because vineyard managers are monitoring soil moisture directly under drip lines, they may not be seeing what the plant “sees,” said Davenport.

There’s good reason to place moisture monitors under drip lines, since growers don’t want them hanging out in the lanes between rows, where they’re more likely to get flattened by a passing tractor. Davenport isn’t asking growers to move monitoring into heavy traffic, though, just a skoosh to either side of the drip line.

Since 2002, Davenport and her colleagues have been monitoring water available to the vine under controlled parameters. They found that monitoring directly under drip lines consistently gives a false impression of the soil moisture actually available to the plant.

A combination of low soil moisture and long hang time may result in a couple of undesirables, namely shriveling of the fruit and an off, raisiny flavor.

Davenport doesn’t doubt that Washington viticulturists will adopt science that helps ensure continued quality.

“We’ve got lots of acreage in grapes, a lot of wineries, but we’re a very close knit bunch,” she said. “We’ve quantified things for our area. This is the first defining study in arid conditions that shows where to monitor for soil moisture. We’ve always got early adopters who really value the science of viticulture, and they help us do the heavy lifting of fine-tuning techniques so that quantified advice can be given. And in the longer term, they encourage and teach others.”
FUTURE GRAPE  BY BRIAN CLARK, MARKETING AND NEWS SERVICES

HOW MANY MERLOTS can you make? At some point, speculates Amit Dhingra, consumers are going to want something different.

“As tastes change, I think there will be more wines filling specific niches. People always want something new,” he said.

A horticultural genomicsist at Washington State University, Dhingra focuses on sequencing genomes and then using that information to produce better fruit.

“We want to improve the food we eat and the wine we drink,” he said. “There’s no other reason to do this kind of research.”

Much has been made of the sequencing of genomes, especially the human genome a few years ago. But, by itself, a genetic sequence tells us very little; it’s just a big haystack of information. Much more precise questions must be answered in order for genetic sequence information to become useful knowledge. With humans, we’d like to know, for instance, which genes make us susceptible to Alzheimer’s or certain kinds of cancer. With crop plants, such as wine grapes, we’d like to know which genes produce particular flavor and odor compounds.

“We’ve got the genome for Pinot noir,” he added, but the big questions remain: which genes are responsible for flavor, odor and health benefits?

To help answer these questions, Dhingra is cultivating Pixie grapevines in his lab. Most grape plants flower for the first time in their third year. Pixie flowers in three months. Pixie is also tiny: a mature plant is only about 18 inches tall, making it perfect for accelerated research on an always-tight scientific budget.

As a new generation of wine drinkers learns to swirl, sniff and sip, grape growers, winemakers and marketing researchers are already anticipating what they’ll want 10 years from now. Like most scientists, Dhingra is hesitant to gaze into his crystal ball and predict the future, but he has a couple ideas that seem like sure bets.

What we’ll see in wine, Dhingra thinks, are new flavors customized for specific market niches. “We already see this with blends,” he said, but grapes bred for particular palettes will produce more consistent results.

Another aspect will be the ability of science to ramp up the health-benefitting properties of grapes (and other fruits). The past couple of months have seen a blast of media coverage for a compound called resveratrol, a naturally occurring plant protectant thought to contribute to a longer, healthier life (at least in lab mice). But nobody knows for sure if resveratrol is good for human health, and we certainly don’t know how it works.

In the future, said Dhingra, “we’ll not only be able to point to a compound and say, ‘That one has health-benefitting properties.’ We’ll be able to say how it benefits us.”

For more information on genomics at WSU, please visit: http://www.genomics.wsu.edu.

King of the Yeasts  BY BRIAN CLARK, MARKETING AND NEWS SERVICES

WHERE does a great glass of wine get its start? In the vineyard, certainly, since the foundation for good wine is always good fruit. But once the fruit is picked and turned over to the winemaker, yeast can make or break a great wine.

Once yeast is added to grape must (the juice and, if red, skins of the grapes), winemakers hope it performs as expected. Ideally, yeast should perform consistently batch after batch, regularly metabolizing a certain amount of sugar into ethanol over time. Yeast that underperforms may result in a sluggish or “stuck” fermentation—an expensive, stinky disaster for a commercial winery and a disheartening mess for a home winemaker. A yeast with a poor nutritional profile—one that, for instance, gobbles up as much sugar as it can in the first few days of fermentation—results in wine with more hydrogen sulfide, giving the finished product a sulfurous, rotten-egg smell.

Especially with winemakers encouraging growers to leave the grapes on the vine a bit longer in order to increase the Brix or sugar content of the ripe fruit, a well-behaved yeast is a must-have tool in the vintner’s kit. Increased hang time results in bigger, bolder wines, but the increased sugars in the fruit can stress yeast that doesn’t have the backbone to handle the job.

Partnering with the commercial yeast producer Lallemand, WSU food scientist Charlie Edwards and his colleagues formulated strains of yeast that can stand up to high-sugar grape musts. Released commercially about a year ago, these new Lallemand yeasts, Edwards said, “are better acclimated to a grape must” with lots of sugar.

Lallemand is now marketing internationally its yeasts based on WSU research, Edwards said. Each package proudly bears a label noting the yeast was “developed in collaboration with Washington State University.”
WSU CAHNRS students honored at 50th annual awards banquet

OUTSTANDING STUDENTS in Washington State University’s College of Agricultural, Human, and Natural Resource Sciences were honored in April at the 50th annual college awards banquet.

- **Riley Mengarelli**, an animal science major from Toppenish, was named Aggie of the Year. This honor goes to the overall top senior majoring in either an agricultural or natural resources field. Mengarelli maintains a 3.97 grade point average, has been active in the WSU Cougar Cattle Feeders Club and currently manages his own cow-calf herd.

- **Danielle Broberg**, a human development major from Bonney Lake, was honored as Family Consumer Scientist of the Year. The award recognizes the outstanding senior majoring in apparel, merchandising, design and textiles; interior design; human development; or economics. Broberg has a cumulative GPA of 3.72, and while at WSU has been named to the WSU President’s Honor Roll every semester. Her department has recognized her as Freshman, Junior, and Senior of the Year.

- **Kelly Hollister**, an animal science major from Snohomish, was named the Capital Press Outstanding Junior in Agriculture. Hollister works at the WSU Beef Center where she gets hands-on experience with care and management of beef cattle. She currently is working on a beef nutrition study.

- **Amanda Hunt**, a junior from Redmond, was named the Outstanding Junior in Human Sciences. Hunt, who is pursuing a degree in apparel design, has a passion for theater costuming. She has volunteered at the WSU’s Theater Costume Shop for several productions and has interned at the Seattle Children’s Theater.

- **Kate Sweitzer**, a sophomore from Moorepark, Calif., was honored as the Alpha Zeta Arnold Knopf Outstanding Freshman. This award recognizes student achievements during the previous academic year. Sweitzer is pursuing a double major in food science and marketing. In addition to her academic pursuits, she is a novice coxswain for the WSU Men’s Rowing team. As a result, she has learned teamwork and leadership skills that will be valuable in the workplace.
Laura and Mike Mrachek

Credit success to working hard, taking risks, attending WSU

Laura and Mike Mrachek are crystal clear about the factors that have helped them become among the most successful agricultural entrepreneurs in the state—hard work, an element of risk-taking and their Washington State University educations.

Now living in Malaga, Wash., the couple grows cherries, apples and wine grapes at three different sites in the state; they were named Growers of the Year by Good Fruit Magazine in 2007. They own and operate Saint Laurent Winery and tasting room, a commercial laboratory, and an irrigation scheduling service. And, in their spare time, they volunteer their time to lead community projects such as Wenatchee’s Feast of the Arts and the WSU Celebration of Washington Wines. Both are active in state organizations, too, including the Washington State Horticultural Association.

“If you love what you do, it’s not off-putting,” said Laura Mrachek. “A lot of people don’t want to work hard enough to get it done.”

She and her husband began their careers working for others, “But we come from a family of entrepreneurs,” Laura said. “There is just not the same satisfaction working for someone else that we’ve found working for our own businesses.”

She earned her Bachelor of Science degree in horticulture from WSU in 1976. Mike earned his B.S. degree in soil science and environmental science in 1974.

The couple met at WSU; both were active members of the WSU Alpine Club, a student rock-climbing group.

Some of the fondest memories of their college years recall all-night trips with the club to reach different climbing destinations, scaling a volcano or two, and as Mike said, “Just being in a world with people all the same age and discussing everything.”

Their Blood Runs Crimson

The Mracheks are staunch supporters of their alma mater. Their son earned his bachelor’s degree in viticulture and enology in May 2008.

“I’m proud when I say I graduated from Washington State University,” Mike said. “It’s a big institution. Being a graduate is part of the solidarity in Washington agriculture. Nobody else can do what it does in this state.”

He and Laura agree that they learned the academics they needed to succeed from professors like Henry Smith who taught soil morphology. The Mracheks note, though, that they also learned life lessons outside the classroom at WSU.

“I learned to never give up,” Mike said. “I learned that, ‘yes, you can do this,’ if you put your head down and work. That has followed me through my whole life.”

Laura agrees. “The whole physicality of the process is important,” she said. “They need to experience the olfactory and tactile part. If you involve all of the senses, you learn much better.”

The Mracheks said beyond a skill set, though, they look for some very specific characteristics when hiring a new employee.

“They have to have fire in the belly and a real work ethic,” Mike said. “And really want to contribute to the success of the organization,” Laura added. “ Mediocrity doesn’t move the needle.”
For Winery Owner Rick Small, the success of Washington’s wine industry can be traced back to one primary element—the land. A member of the third generation to live and work on the family cattle ranch and wheat farm outside Lowden, Small was among the first in Walla Walla to enter grape-growing and winemaking in the mid-1970s.

“I can’t imagine doing what I do without my degree in agriculture,” said Small, founder and owner of Woodward Canyon Winery in Lowden, Wash., and current chair of the Washington Wine Commission. He graduated from Washington State University in 1969, and then spent time traveling in Europe.

“That’s where I was exposed to wine, the style of wine and the inter-connection between wine and food,” he said. “It was a very important way to see vertical integration in agriculture. Now, we grow the grapes, make the wine, market and sell the wine and get it in the hands of consumers. The more I got involved in wine, the more I got involved in agriculture. They are totally connected.”

Woodward Canyon, which is producing about 15,000 cases per year, is one of the oldest wineries in the state and one of the most successful. Its wines have earned national and international acclaim and helped put the Walla Walla appellation on the map as one of the most celebrated wine regions in the country.

Small has watched the Washington wine industry grow exponentially over the past 30 years. Currently, there are approximately 600 wineries in the state with some 34,000 acres of wine grapes in production.

“The growth of the industry is very exciting,” he said. “Besides the vineyards and wineries themselves, you’ve got the tourism that is bringing people from urban areas to rural areas to taste wine, have dinner and spend the night. I’ve loved watching it develop and change.”

The current economic situation will challenge the industry, but Small said its long-term future is still bright. “I’ve weathered several economic downturns over the years, but none quite as severe as this one seems to be,“ he said. “But the good wineries, the ones that are lean and not buried in debt, will be OK. Of course, the wines have to be of good quality, and they have to be priced right, too.”

Small attributes much of his success to the lessons he learned at WSU.

“I have no academic training in winemaking per se,” he said. “But, my WSU education helped me to be more receptive and more curious. I learned the basics of how to do research, how to learn, and how to be open to new opportunities.”

His memories of his time in college are happy ones. “Being a Coug means that you have some fabulous friends that you’re going to remember your whole life. It means you’re going to collaborate with these people professionally, even if you didn’t attend WSU at the same time or know each other when you were there. It means wearing your old ‘Butchman’ coat at the football game and hanging out at the tailgate party.

“I wasn’t the most outgoing person when I came to Pullman, but living in a fraternity at a relatively small university, I just grew.”

Alumnus says quality winemaking rooted in good agriculture

By Kathy Barnard, Marketing and News Services

Mark Your Calendar!

Celebrate Washington Wine

Chateau Ste. Michelle, Woodinville, WA
January 30, 2010

You are invited to a spectacular evening featuring fine food, exceptional wines, interesting conversation, and silent and live auctions. Mark your calendar for this ninth annual black tie dinner and wine auction!

For tickets and more information visit www.wineauction.wsu.edu

Proceeds from the auction benefit Washington State University’s Viticulture and Enology Programs.
Women’s History award winners share WSU, science background and leadership skills

WSU PLANT PATHOLOGIST Debra A. Inglis and business owner and community leader Laura Laurent Mrachek share at least three qualities. They are WSU alumnae, come from a science background and have proven leadership skills. Now they have a fourth thing in common: both are recipients of the 2009 CAHNRS Women’s History Award.

Inglis, who earned her Ph.D. in plant pathology from WSU in 1982, was honored for Professional and Academic Leadership. She is an associate professor of plant pathology at the WSU Mount Vernon Northwest Research and Extension Center. From 2004 to 2008, she served as the interim director and assistant dean there. During her tenure, the center was renovated to become one of the “crown jewels” of WSU’s research and extension facilities.

“As WSU begins its quest to become an ‘engaged university,’ we can look to Dr. Inglis’ career and achievements as a model of success,” said CAHNRS Dean Dan Bernardo.

Mrachek, who earned her bachelor’s degree in horticulture, tree fruit production and landscape horticulture in 1977, was honored for Community Leadership and Public Service. Now living in Malaga, Wash., she and her husband, Mike, grow cherries, apples and wine grapes at three different sites in the state; they were named Growers of the Year by Good Fruit Magazine in 2007. They own and operate Saint Laurent Winery and tasting room, a commercial laboratory and an irrigation scheduling service. And, in their spare time, they volunteer their time to lead community projects such as Wenatchee’s Feast of the Arts and the WSU Celebration of Washington Wines. Both are active in state organizations, too, including the Washington State Horticultural Association.

“Laura is truly a giving person,” according to Jay Brunner, director of WSU’s Tree Fruit Research and Extension Center at Wenatchee. “She has and continues to provide leadership by her example and support of others.”

WSU, CAHNRS mourn friend, benefactor Ed Heinemann

WSU and CAHNRS lost a long-time friend and benefactor May 28, 2009, with the death of Edward Heinemann, a leader in Washington State’s horse racing industry.

“Ed Heinemann truly made a difference in the lives of numerous students studying animal sciences, in the research conducted at our Lind Field Station, and in the College of Agricultural, Human, and Natural Resource Sciences,” said CAHNRS Dean Dan Bernardo. “Few, if any, had more Coug spirit than Ed. His generosity will have a positive impact on agriculture in this state and beyond, today and well into the future.”

Born in 1917 in Ritzville, Wash., Heinemann came to WSU to pursue a degree in animal science. It was there he met his wife, Arlene. Married in 1941, they were together nearly 60 years until Arlene’s death, and raised two sons: Russell, a WSU alumnus, and Dale, a University of Puget Sound graduate.

“Uncle Ed” graduated in 1939, and went on to serve in the Army Air Corps and as the WSU Extension agent in Lincoln County, coordinating 4-H programs. Later, he spent 28 years as field secretary to the Washington Horse Breeders Association and then as director of the Washington Horse Racing Commission.

Heinemann was an active alumnus of WSU. He served as president of the Seattle Cougar Club, vice president of the WSU Alumni Board and president of the Lariat Club, which is now known as Block and Bridle. He was a founding member of the Howard Hackedorn Scholarship, which supports students majoring in animal sciences.

Just last year, he announced creation of the Edward and Arlene Heinemann Lind Dryland Research Endowment. Upon his passing, proceeds from the sale of his Olympia home will go to the Lind Station as well as to the Edward and Arlene Heinemann Animal Sciences Endowment.
Golden Grads

Front Row, L to R:
Gary Vreeburg,
Marcelle (Ames) LaGrou,
Judy (Rose) Camden,
Jim Abbott,
Chris Comstock,
Nellie Finnell,
Ann Sundgren

Middle Row, L to R:
Chuck Chambers,
Fred Stormshak,
Jean (Oestreich) Galbraith,
Don Olson,
Vern Eliason,
Virgil Myers,
Ruth (Armstrong) Scarlett,
Howard Scarlett,
Myron Swanson

Back Row, L to R:
Clarence Bolt,
Kerman Love,
Peggy (Severn) & Bob Early,
Dick Teel,
Bonnie (Pearson) Harding

Diamond Grads

Front Row, L to R:
Maryalis (Anhorn) Klicker,
Esther (Keith) Whiteley,
Dona (Griffiths) Burns,
Marjorie (Horne) Leidy,
Hank Basso

Second Row, L to R:
B.J. (Lyon) Sorenson,
Virgil Whiteley,
Merle Baldwin,
Jim Slavin

Third Row, L to R:
Norma “Tad” (Tadlock) Johnson,
Chuck Haight,
Beverly (Ulrich) Benedict,
Bobbie (Lindquist) Babb

Top Row, L to R:
Homer McKown,
Reed Benedict

Visit our Alumni and Friends Web site to catch up with more of your fellow CAHNRS Cougs. On our site, you’ll also find the ’08 donor roll and memoriam list. Visit www.cahnrsalumni.wsu.edu.
KARIN and MIKAELA are the first recipients of the WSU Creamery/Food Science Undergraduate Scholarships. These scholarships support students interested in pursuing careers in the dairy or food science industries.

As freshmen, Karin and Mikaela each received $1,500 awards, which has helped defray the cost of tuition. The scholarships are renewable each year for a total of four years.

“I am grateful to have been selected for this award and proud to represent the Creamery as one of its scholarship recipients,” said Karin. Mikaela says the scholarship “has released some of the burden and stress” of paying for her education.

The scholarships are made possible by your purchases of products from the WSU Creamery, so enjoy our ice cream, cheese, and other fine products in the knowledge that you are helping hardworking students achieve their dreams of a college education.

Order Cougar Gold or any of our eight great cheese flavors at 1-800-457-5442 or www.wsu.edu/creamery