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DATES TO REMEMBER

September
4  WSU at Oklahoma State
11  WSU vs. Montana State, Pullman, Crop and Soil Sciences Alumni Event
18  WSU at Southern Methodist University
25  WSU vs. USC, Pullman, Friends of Animal Sciences BBQ and Silent Auction; CAHNRS Hall of Honored Alumni and Friends; WSU Foundation Weekend

October
2  WSU at UCLA
9  WSU vs. Oregon, Pullman, Homecoming
16  WSU vs. Arizona, Pullman, Dad’s Weekend
23  WSU at Stanford
30  WSU at Arizona State

November
6  WSU vs. California, Pullman, Armed Forces Day
13  WSU at Oregon State

December
4  WSU vs. Washington, Pullman, Apple Cup

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

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

April
9  Scholarship Reception and Mom’s Weekend

CAHNRS Alumni & Friends website:
cahnrsalumni.wsu.edu


LEFT: Rock pool at the Bellevue Botanical Garden. Photo by Phillip Waite, associate professor, Department of Horticulture and Landscape Architecture.
What’s in a name?
Emphasizing the “big H” in CAHNRS

While some of our constituents still refer to us as the “College of Ag,” I appreciate the breadth and diversity captured in our full name—the College of Agricultural, Human, and Natural Resource Sciences.

The “big H” in CAHNRS represents all of the human sciences in the college, which includes human development, economics and the design disciplines. Each has deep roots in our land-grant tradition, continues to attract large numbers of students and is vital to addressing the issues and problems that our stakeholders face today.

As a college, we have not only made great scientific contributions to agriculture and allied disciplines, but groundbreaking practical advances in the many related industries. Over the years, we have made equally important gains in the human sciences. This issue of Connections specifically celebrates the design disciplines: apparel merchandising, design and textiles; interior design; and landscape architecture. (And if you love Butch the Cougar like me, the cover art is priceless!)

Traditionally, all of the design disciplines have had outstanding undergraduate programs and large enrollments. But there is much more to each department; recent efforts are focused on increasing the depth and range of our research and creative scholarship. Design faculty are engaged in cutting-edge, interdisciplinary investigations that are making a difference on many levels. For example, textiles scientist and AMDT chair Karen Leonas is leading a project to develop a biodegradable fabric mulch to replace the expensive, petroleum-based black plastic that so many specialty crop growers currently use. In interior design and landscape architecture, faculty members are using sustainability as a guiding principle for creating spaces inside and out. During this time of shrinking resources, the science, art, precision and creativity that CAHNRS design professionals bring to their work is of unlimited value to the people and businesses of Washington and beyond.

Such commitment to innovation that can be applied to everyday life continues to characterize CAHNRS and WSU Extension despite staggering financial challenges. It is no secret that both have endured significant budget reductions over the last two years as a result of the state’s poor economic situation. Our response? In fiscal year 2010, CAHNRS and Extension faculty brought in over $102 million in competitive research and other external grant funds. That is 62 percent above the highest previous annual total, and nearly 50 percent of WSU’s total extramural awards. This $102 million infusion into the state’s economy likely generates two to three times more in indirect economic impacts from the associated spending that circulates through the economy. It also represents one of the best returns on investment of Washington tax dollars, as agricultural research and extension has been repeatedly shown to generate a social rate of return between 20 and 60 percent.

This past spring and summer, WSU President Elson S. Floyd visited communities in each of the state’s 39 counties. I accompanied him on many of those trips. Again and again, we heard about the benefits of and need for more of WSU’s teaching, research and extension programs throughout the state because of their proven impact on the lives of citizens and contribution to economic development. As alumni, friends and stakeholders, we need your help in assuring that our story is understood by influential Washingtonians everywhere. We can all be proud of what we do. I certainly am!

Go Cougs!

Daniel J. Bernardo
Dean, College of Agricultural, Human, and Natural Resource Sciences
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**.
The dung decoders

Gutsy research going on at WSU Wildlife Habitat and Nutrition Lab

BY BRIAN CLARK AND LYNDON DUCUAN

WHEN CANADIAN SCIENTISTS literally stepped in 8,000-year-old caribou dung exposed as a glacier melted in Canada’s Yukon Territory, their first thought wasn’t “Yuck!” but, “What a treasure trove!”

And when the Canadian scientists wanted to know what those caribou were eating 8,000 years ago, they turned to Washington State University’s Wildlife Habitat and Nutrition Lab to have the ancient dung analyzed.

“They sent us fecal pellets to see what [the caribou] were eating and to compare that with present day herds,” Wildlife Habitat and Nutrition Lab manager Bruce Davitt said. “The amounts found were similar to a typical spring or summer diet.”

The lab serves the scientific community on a wide variety of projects. “We have worked with about 90 universities, biologists in almost every state and Canadian province and on projects in about 30 countries,” Davitt said. “In a lot of the projects, as with the ancient caribou, we’re just one part of the bigger picture.”

Gut contents of a 13,000-year-old wooly mammoth frozen in Alaska, diets of feral goats found on an island east of Madagascar from the pirate era, post-eruption diets of elk in the Mount St. Helens area, and diets of reindeer in Mongolia only begin to list some of the projects the lab has been involved with over the years, according to Davitt.

The self-sustaining lab is also a core facility for the Department of Natural Resource Sciences to train graduate students in laboratory techniques. As well, the lab is used in support of various undergraduate wildlife ecology course labs while undergraduate researchers gain valuable research experience.

More information is available at http://nrs.wsu.edu/research/wildlifehabitat.html.

Innovating outdoor fashion

BY JESSICA MCCORKLE

BY COMBINING gear smarts with street smarts, an AMDT Cougar climbed a mountain of success with REI’s recent launch of the eVent Jacket. As product line manager, alumnus Tim Brown is responsible for the development of soft goods under the REI brand.

“At REI, we’ve become mindful of the importance of balancing performance and aesthetics, which has taken REI gear off the mountains and onto the streets as everyday wear,” Brown said.

Some of the most important skills Brown learned came from his years as an Apparel, Merchandising, Design and Textiles student at WSU. Brown said knowing fabric properties and materials and having the ability to identify fabric was key when entering the industry.

At REI, predicting future trends and consumer needs is critical to product and company success. Brown is no stranger to the importance of forecasting and shared where he anticipates the industry going.

“In the coming years, I see shopping experiences changing. Because of all the information on the Internet, consumers expect more. This will definitely change the effects of the brick-and-mortar store experience, but I don’t see these stores disappearing.”

Bug Bowl Team heads to nationals

WITH A FIRST PLACE FINISH in the regional Linnaean Games held in Boise under its belt, the WSU Bug Bowl Team is excited to take their expertise to the next level.

“We’re looking forward to the nationals,” said entomology professor and team adviser Richard Zack. And that means kicking it up a notch in preparations. While other students spent the summer slapping insects, the WSU team has been studying them.

During the regional round of competition in April, team members Brian Bahder, Natalie Boyle, Bonnie Ohler and Amber Vinchesi defeated Oregon State, and then went on to win a close match against UC Davis at the Pacific Branch of the Entomological Society of America meeting in Boise. Both WSU and UC Davis will advance to the national competition at the 58th annual Entomological Society of America meeting Dec. 11–13 in San Diego.
REALIZING a decade-long dream, an international team of scientists has released the peach genome sequence, the first genome completed for crops in the Rosaceae family. The data that comprises the peach genome is housed at Washington State University in the USDA-funded Genome Database for Rosaceae at www.rosaceae.org.

Improvement of traits such as enhanced flavor and disease resistance is now a more efficient prospect for peach and other tree fruit. This new resource will enable targeted, DNA-informed breeding, an approach to developing tasty and nutritious fruit that is both more precise and more economically viable than traditional breeding.

The International Peach Genome Initiative’s decision to release the genetic makeup of the peach ahead of publication in a scientific journal could have far-reaching implications for the future of peaches and related Rosaceae plants like almonds, blackberries, apples, cherries, plums, raspberries, roses and strawberries as well as poplar, citrus and chestnut trees.

“Having access to even a piece of the genome sequence can save researchers literally years of work,” said Dorrie Main, associate professor of bioinformatics in the WSU Department of Horticulture and Landscape Architecture. Main, who has been working on the peach genome project since 2001, said that making the data publicly available means that scientists investigating genetic sequences to identify the genes controlling important traits in peach will be able to both use and refine the information immediately.

Jim McFerson, manager of the Washington Tree Fruit Research Commission, said, “It is tremendously exciting to know that WSU, OSU and USDA researchers will now have access to this critical genomic tool that has direct applicability to our breeding and physiology programs in apple, cherry and pear. Our investment in world-class faculty and cutting-edge technology is paying off. It gives both our researchers and industries a competitive advantage as well as adding to the world’s scientific knowledge base.”

Productive peach research

While factors such as genetics and physical activity contribute to childhood obesity, parenting practices may have the largest impact on a child’s eating behavior.

Thomas Power, chair of WSU’s Department of Human Development, said parents directly influence their child’s eating habits. Parents, he stressed, especially impact the development of a child’s preference for healthy foods as well as their ability to regulate how much they eat. Power and his colleagues discovered in three studies of low-income families that an “indulgent” feeding style is strongly associated with childhood obesity.

“In this style, parents let their kids eat whatever they want and demonstrate a lot of nurturance during dinner, making it a very pleasant experience,” Power said. “Our research suggests that these low levels of control are associated with obesity.”

However, Power noted, other research suggests high levels of control can also contribute to childhood obesity. “When parents push children to finish their vegetables in order to get dessert, the dessert becomes more rewarding,” he said. “Children begin to like ice cream better, for instance, and beans less.

“Oftentimes, as parents put pressure on their kids to eat, the kids focus more on what their parents want and less on their internal cues,” Power said. “As a result, kids are less attentive to feeling full and tend to eat more than they really need to eat.”

While too much control or not enough control is often associated with obesity, medium control appears to have a desired effect, Power said. “Kids will eat what they need to eat and eat as much as they need to eat. The parents’ job is to make sure their kids are eating healthy foods and make it a positive experience rather than a power struggle.”

‘Eat your spinach or no dessert!’

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‘Eat your spinach or no dessert!’

By Sarah Linker
THE RAIN STOPPED. The sun shone. The drums beat, and even the hawks showed up for the groundbreaking ceremony for the new Washington State University Arboretum and Wildlife Conservation Center on April 22, 2010, the 40th anniversary of Earth Day.

Approximately 80 people gathered to break ground on the new project and participate in a Native American blessing of the land it will encompass.

“It took many people working over many decades to get us where we are today,” said Rod Sayler, chairman of the Arboretum and Wildlife Conservation Center Committee. “It is a very good day for WSU.”

Phase 1 of the project focuses on creating about two miles of trails on the property and constructing a gathering circle in the heart of the arboretum. Nez Perce Tribe drummers, President Samuel Penny and elder Horace Axtell helped consecrate the site.

In 2007, WSU President Elson Floyd provided an opportunity for a 100-acre arboretum to be established on the eastern edge of the Pullman campus. WSU Capital Planning and Development coordinated a committee to develop a master plan for a site that the U.S. Department of Agriculture has managed for more than 60 years. The site and vision expanded to 170 acres with facilities for grizzly bears and wild herbivores. Besides the trails and gathering circle, plans include a biodiversity center, outdoor raptor amphitheater and demonstration gardens.

Dan Bernardo, dean of the College of Agricultural, Human, and Natural Resource Sciences—the academic home for the new center—credited Floyd with helping to make its creation a reality. “Dr. Floyd understands the importance of a university having a space like this,” Bernardo said, “not only as a place for teaching, research and extension, but also as a cornerstone of community and state visitors’ experiences at WSU.”

Celebrate Washington Wine gala to celebrate its 10th anniversary

WHEN THE PARTY gets under way on Jan. 22, 2011, at the Chateau Ste. Michelle Winery, it will be the 10th anniversary of Celebrate Washington Wine, the gala dinner and auction to benefit the WSU viticulture and enology program.

Despite the weak economy, the 2010 auction sold out. Generous donors and bidders brought in more than $240,000, with net proceeds going to help complete the endowment for the V & E program’s chair, as well as provide funding for undergraduate scholarships, educational exchange programs and equipment.

This year a number of seniors in the V & E program attended the event, escorting guests from the entry into the gala. It provided them with the opportunity to meet wine industry leaders, and for guests to learn more about how their contributions benefit the program and students.

For the second year, Ste. Michelle Wine Estates teamed up with Youngs-Columbia Distributors and nearly 200 northwest restaurants and wine shops to contribute a portion of their fall wine sales to the program. The promotion added $40,000 to the total proceeds.

For more information on donating to or attending the 2011 gala, visit www.wineauction.wsu.edu.

WSU regent and retired Boeing executive v.p. Scott Carson surprises his daughter, Shelley Cloer, with a bid.
Common reading program gives students “Food for Thought”

When Washington State University announced that its Common Reading for the 2009–2010 school year would use The Omnivore’s Dilemma by Michael Pollan, the College of Agricultural, Human, and Natural Resource Sciences immediately became an active partner in developing programming for the more than 5,000 students using the book in classes.

The sometimes-controversial book focuses on a variety of agricultural practices to detail where our food comes from.

CAHNRS Associate Dean Kim Kidwell led activities surrounding the college’s participation in the Common Reading program. She organized her Agricultural and Food Systems 101 class around the book, bringing in guest speakers to address a number of issues it raises. She also opened the first portion of each Monday’s class to anyone on campus, which resulted in a packed audience throughout the semester.

Working with Kidwell, the CAHNRS Marketing and News Services team developed a website devoted to the project that included articles about the guest speakers in Kidwell’s class, an interactive blog called “Chew on This” where students and others could express their thoughts on food- and ag-related questions, media coverage related to food and ag issues, and a weekly Ag Word of the Week to help educate site users about the science of agriculture. The Ag Word of the Week also was featured on all residence hall dining tables on the Pullman campus. Gerald Steffen, creative manager for the-then WSU Extension Printing and Publishing, developed a Food for Thought logo used on all Common Reading materials for the year. The team won awards for their efforts from WSU as well as the Association for Communications Excellence in Agriculture, Natural Resources, and Life and Human Sciences.

The college’s activities culminated on Jan. 13 with a panel discussion of ag issues by industry experts. More than 400 students, faculty, staff and agricultural alumni and stakeholders attended the event, which directly preceded Pollan’s address at Beasley Coliseum. KWSU-TV filmed the panel discussion, which aired on the station’s @WSU program this spring.

A story’s worth a thousand workshops for Hmong farmers

By Holly Luka

In the Hmong culture, farmers learn through storytelling and art. While a classroom style of teaching reaches some farmers in Washington, barriers like language, work schedules and different learning styles make it difficult to effectively convey new practices to Hmong farmers.

The Hmong, who are from the highlands of Laos, began immigrating to King County in the early 1980s as refugees from the Vietnam War. Since then, WSU educators have helped the farmers find markets in which to sell, but were unable to teach them about the benefits of local, sustainable farming methods.

“Classes and workshops on improving farming practices had low attendance because of learning barriers,” said Bee Cha, Hmong outreach WSU Extension educator.

Since the Hmong farmers were not going to classes and workshops, we needed a better way to reach out, so we brainstormed non-traditional methods of education.”

WSU King County Extension and the WSU Small Farms Team turned to Hmong youth and technology-based narrative to teach sustainable business and farming practices to Hmong farmers. The WSU educators found 12 young farmers eager to learn video production techniques that would help them share aspects of their culture. Those youth are now making videos to educate the farmers in their communities. And two of the students are also creating other instructional documentaries as WSU employees.

Regeneration of world-class wheat-breeding program

A NEW GENERATION OF WHEAT breeders is leading one of Washington State University’s most celebrated programs.

Arron Carter, a recent WSU graduate, is the new winter wheat breeder. Michael Pumphrey, a research geneticist with the USDA’s Agricultural Research Service in Manhattan, Kansas, is WSU’s new spring wheat breeder.

Carter completed his doctoral degree with an emphasis in wheat breeding and genetics in 2009, and quickly emerged as a top candidate from a pool of more than 50 scientists from around the globe. He succeeds Professor Stephen Jones in the winter wheat breeding position. Jones is now the director of WSU’s Northwestern Washington Research and Extension Center in Mount Vernon.

Pumphrey assumed his new responsibilities in January 2010. He succeeds former spring wheat breeder Professor Kim Kidwell, who is now associate dean of academic programs in the WSU College of Agricultural, Human, and Natural Resource Sciences.

“These appointments reflect a new generation of wheat breeders at WSU,” said CAHNRS Dean Dan Bernardo. “Their work on emerging issues for the industry will help take an already stellar program to the next level.”

Rich Koenig, chair of the WSU Department of Crop and Soil Sciences, agreed. “I couldn’t be more pleased with the outcome of these searches. WSU is well positioned to continue the world class wheat breeding program initiated by Vogel and Spillman,” he said.

Research featured in international journals

THE RESEARCH OF WSU scientists studying organic, sustainable agricultural practices made the pages of the two most prestigious scientific journals in the world this past June. Science published an article by WSU Regents Professor and soil scientist John Reganold and WSU-trained soil scientist Jerry Glover on earth-friendly perennial grain crops described as one of the largest innovations in the 10,000-year history of agriculture. They predict that such varieties, which require less fertilizer, herbicide, fuel and erosion than annual grains, could be available in two decades.

Nature published an article by WSU entomologist David Crowder and his colleagues at WSU and the University of Georgia about their findings that more balanced animal and plant communities typical of organic farms result in higher and better quality yields than conventionally grown crops. The researchers looked at insect pests and their natural enemies and found that organic potatoes with relatively equal populations of predator and prey insects had larger plants.

Do prevention programs pay off?

JUST HOW SUCCESSFUL and cost-effective are community-based substance abuse prevention programs? It’s a question that plagues politicians and policy makers, especially in a time of shrinking resources and increasing demand for services.

Now, thanks to a two-year $400,000 grant from the National Institutes of Health, researchers at Washington State University are working on a new way to assess the effectiveness of those programs in the real world. That tool, they say, could help save time and money.

“These statistical techniques could help us make better use of limited resources at local, state and national levels,” said Professor Robert Rosenman, associate director of WSU’s School of Economic Sciences.

Laura Griner Hill, a faculty member in the Department of Human Development, agrees.

She conducts research on the national Strengthening Families Program for Parents and Youth 10–14, delivered throughout Washington by WSU Extension faculty. The program will be the focus of the economic analysis techniques being developed.

Other members of the research team include Professor Ron Mittelhammer, director of the School of Economic Sciences, and Assistant Professor Bidisha Mandal, an Extension economist specializing in health issues.

“There is research evidence that prevention programs work, and teens who attend them are less likely to use alcohol, tobacco and drugs,” Hill said. “What we want to know, though, is do substance abuse prevention programs like Strengthening Families really work in the real world? And, if they do work, what is the value to society?”

Revolutionary new food processing technology to go commercial

BY KATHY BARNARD

Imagine a salmon filet that looks, tastes and is as nutritious as freshly cooked salmon but has a shelf-life of more than six months.

A new technology developed at Washington State University will make that dream a reality.

For the first time ever, the U.S. Food and Drug Administration has approved the use of microwave energy for producing pre-packaged, low-acid foods, a major milestone that clears the way for its commercialization. The technology developed at WSU could revolutionize how we preserve and process food.

Juming Tang, a professor in the WSU Department of Biological Systems Engineering, led a team of university, industry and U.S. military scientists to develop the technology. The outcome results in food with a longer shelf life as well as better flavor and nutritional value compared to traditional food processing methods such as canning.

“New processes for producing shelf-stable, low-acid foods must pass rigorous reviews by FDA to ensure that the technology is scientifically sound and the products will be safe,” Tang said. “Our team patented system designs in 2006 after more than 10 years of research. We spent another three years developing a semi-continuous system, collecting engineering data and microbiologically validating the process before receiving FDA acceptance.”

The team’s Microwave Sterilization Process technology immerses the packaged food in pressurized hot water while simultaneously heating it with microwaves at 915 MHz—a frequency that penetrates food more deeply than the 2,450 MHz used in home microwave ovens. This combination eliminates food pathogens and spoilage microorganisms in just five to eight minutes and produces safe foods with much higher quality than conventionally processed ready-to-eat products.

Spearheaded by C. Patrick Dunne, Department of Defense combat feeding directorate at the U.S. Army Soldier Systems Center at Natick, Mass., the project is funded from a variety of sources and a consortium of industry members that include Kraft Foods, Hormel, Ocean Beauty Seafoods, Rexam Containers, Ferrite Components and Graphic Packaging. The WSU team has worked closely with process authorities from Hormel and the Seafood Products Association to establish validation procedures and prepare documents. In addition, faculty members from multiple WSU academic units, particularly the School of Food Science, contributed to the project.

“The team’s collective efforts have brought a new food processing technology to the forefront which will truly benefit not only the commercial sector but our war-fighters worldwide with a wider variety of high quality, shelf-stable foods,” said Gerald Darsch, director of the U.S. Department of Defense Combat Feeding team.

Evan Turek, senior research fellow at Kraft Foods, said Tang’s new technology will make a huge difference for the food industry. “Since the introduction of industrial microwave ovens in the late 1940s, the food industry has been interested in exploiting their rapid heating capability to improve the quality of canned food,” he said. “The technical issue has always been ensuring uniform and reproducible heat treatment. Dr. Tang had a vision about how this might be overcome, and with his leadership and the engineering prowess of his research staff and students, a protocol for practicing and validating microwave sterilization was established. Kraft Foods is proud to have been an early supporter of the research program at WSU and looks forward to the commercialization of the technology.”

Dan Bernardo, dean of the WSU College of Agricultural, Human, and Natural Resource Sciences, said the impact will be dramatic. “There have been very few advances leading to FDA-approved food processing technologies in recent history,” he said. “The FDA’s approval of this new technology truly could revolutionize the way we process and preserve food—ensuring food safety, increasing its longevity and maximizing the retention of its flavor and nutrition.”
IT WAS A BANNER MOMENT for the College of Agricultural, Human, and Natural Resource Sciences when faculty, staff, students, WSU President Elson S. Floyd, CAHNRS Dean Dan Bernardo and industry representatives gathered last fall to announce and celebrate the news: Washington State University research teams were awarded nearly $14 million in U.S. Department of Agriculture grants aimed at specialty crops such as tree fruit, wine grapes and potatoes. They will receive nearly a third of the total $47.3 million awarded nationally, which places them among the top recipients in the country.

“This is a proud day for Washington State University,” said President Floyd. “These awards reflect the caliber of cutting-edge science being conducted by our faculty members, as well as the unparalleled support we enjoy from the specialty crop industry.”

Bernardo agreed. “This kind of unprecedented success is a point of pride for WSU and the entire state,” he said. “It is a direct result of our world-class quality research and the hand-in-glove partnership we have with the specialty crop industry in Washington. We also need to thank the state’s congressional delegation for their help in supporting the Specialty Crop Research Initiative in the last Farm Bill.”

U.S. Sen. Patty Murray said the funds would make a difference for Washington specialty crop growers. “Washington state farmers are among the best in the nation at producing specialty crops like apples, cherries and pears,” Murray said. “These USDA grants will give Washington State University researchers the resources they need to keep our state on the cutting edge of agricultural research, and help our farmers continue to grow the healthy, delicious crops that feed our families and support our communities.”

Congressman Doc Hastings said the partnership between WSU and the specialty crop industry has always been strong. “Washington State University does an outstanding job finding ways to improve the quality and quantity of specialty crops grown in central Washington,” Hastings said. “Having supported the efforts of the researchers and scientists at the facilities in Prosser and the Tri-Cities for many years, I can tell you that their research is world class and that the results of their studies have significantly improved the specialty crops grown throughout central Washington. The selection of WSU for these grants proves that they are among the best qualified throughout the nation to perform this type of important research.”

Ralph Cavalieri, director of the WSU Agricultural Research Center, noted that many of the grant applications were successful because of progress made by researchers with $1.5 million in state dollars awarded in 2007–08 in the Emerging Research Issues component of the Unified Industry-based Agriculture Initiative. “Those [state] funds allowed our scientists to lay the foundation of high-quality exploratory work necessary to leverage federal dollars,” he said. “The state’s investment has paid a terrific dividend.”

Investing in Quality

USDA started its Specialty Crop Research Initiative in 2008 to target research funding of fruits, vegetables, tree nuts, dried fruits, and horticulture and nursery crops. Designated research funds have not previously been available for these crops, unlike the long-established programs for commodity crops such as wheat, corn and soybeans.

Last year, WSU received $3.3 million, or about 12 percent of the total awarded. This year, WSU scientists—working in interdisciplinary teams—will receive nearly $14 million, either through direct grants or as subcontractors on projects led by other institutions. The research teams will study a wide variety of topics, from the most basic science at the cellular level to applied best practices that solve problems growers face in the orchard and field.
HAVING THE RIGHT NUMBER OF CATTLE on the right piece of land for the right amount of time for the right reasons may be one of the most powerful tools farmers have to ensure the long-term sustainability—both economic and environmental—of their operations, according to Donald D. Nelson, Extension beef specialist in the Washington State University Department of Animal Sciences.

“This is a major paradigm shift,” said Nelson. “We’re using grazing as a tool to create a desirable future landscape and sustainable ecosystems. Planned grazing mimics natural cycles, which typically are most effective economically and biologically.”

Nelson spearheaded Beefing Up the Palouse, a demonstration project in eastern Washington, to develop sustainable alternatives for farmers with land soon to come out of the federal government’s Conservation Reserve Program. That program pays farmers between $50 and $80 an acre not to grow anything on what is usually marginal or highly erodible farmland in an effort to reduce soil erosion and improve wildlife habitat. Nelson said more than 1.5 million acres in Washington are enrolled in 10 to 15-year CRP contracts. A significant portion of this acreage is nearing the contract end over the next several years, leaving farmers struggling to figure out how to make marginal land profitable. Nelson’s research indicates that science and market conditions now favor several options.

For example, because most CRP land has had no chemical applications for at least a decade, it can be certified organic almost immediately, making it suitable as organic cattle pasture or growing organic hay. Another alternative focuses on rural tourism, such as trail rides, field trials for hunting dogs, or bird or deer hunting preserves. And there is the option of actively using the land to graze cattle, goats or horses in rotation with growing grain or other crops.

All options, however, hinge on improving the land. Because it has been relatively untouched for so long, CRP land often is biologically decadent, having lost some of its ability to store water
and support new plant growth. The Beefing Up the Palouse study indicates planned grazing is key to restoring soil fertility, water-holding capacity and wildlife habitat.

Conducted on G & L Farms in Adams County, the project entailed grazing 200 to 300 head of cattle on three to five-acre paddocks for 12 hours at a time. The cattle ate about half of the growth and trampled the rest of it into the ground before being moved to the next paddock. The cattle did not return to the same piece of land until adequate re-growth had occurred. “To put it simply, planned grazing means having the right number of livestock in the right place at the right time,” said Gregg Beckley, project co-manager and owner of G & L Farms. “The concept comes from [the grazing pattern] of bison that came across the plains where large, concentrated numbers of livestock would be in places for only a short period of time and not return to that same piece of ground for up to a year.

“High density stock rates for short periods of time in conjunction with an adequate recovery period brings the land back to what Mother Nature intended,” Beckley continued. “The grass will flourish.”

Nelson said one of the key factors to high density grazing is the “graze-trample ratio,” which measures the proportion of forage eaten compared to the amount of forage trampled. “We want the animals to perform well, so the farmer profits,” he explained. “We also want organic matter trampled into the ground to rejuvenate the soil.” In Beefing Up the Palouse, Beckley distributed alfalfa seed, a natural nitrogen fixer, and relied on the cattle to push the seeds into the ground.

Nelson characterized knowing when to move livestock from one place to another as “both an art and a science. A lot of it is based on experience, and every piece of land is different,” he said. But, Nelson emphasized, “You can’t manage what you don’t measure,” so monitoring the impact of the livestock on the land as well as their overall health is critical to the success of planned grazing. By measuring the weight of animals before and after they graze, a farmer can monitor cattle performance. Measuring ecosystem processes includes looking at a number of variables, including the depth of root systems, the amount of bare ground, biomass production and plant diversity.

If done well, planned grazing improves the land, Nelson said. On G & L Farms, it increased the fertility and water-holding capacity of every parcel grazed. According to the project’s final report, that potential for greater productivity could provide returns greater than the current CRP payments, depending on the availability of water and fencing and the knowledge and skill of farmers using the method.

Restoring the land also can mean restoring rural economies, according to Nelson. “A lot of CRP land is owned by absentee landlords or people who have retired off the farm,” he said. “That decreases the economic activity in already struggling communities.” It also means, Nelson added, that the people grazing the cattle will probably not be the landowners, and that long-term lease agreements will be necessary to amortize the cost of fencing and water development.

Nelson hopes the project provides a model that farmers will readily adopt. But, he noted, long-term collaborative working relationships will be key to its success. There are economic, environmental, social and technological components to any sustainable integrated agricultural system, he said, and each of those areas is a complex arena of situations and stakeholders.
PALOUSE RIDGE GOLF CLUB, nestled among the rolling hills of the Palouse on the northern edge of the WSU Pullman campus, was designed by golf course architect John Harbottle III and already has won accolades from golf media around the nation. Completed in August 2008, it was named second “Best New Course” by both Golf Digest and Golfweek magazines in 2009. Both publications praised the course’s use of the existing landscape to create an “old school, glitz-free” playing experience.

All true, says course superintendent Todd Lupkes. But, he emphasizes, the primary mission for the new course is academic: teaching and research. “The thing that’s different about Palouse Ridge isn’t the construction or location, it’s that Palouse Ridge is not managed like any other golf course,” he said. “From the beginning, we’ve included language about our academic mission and we hired people to meet those goals. This is a classroom first, and then in addition to that we run a championship 18-hole golf course.”

WSU has long been a leader in training turfgrass scientists. Its turfgrass program is 40 years old; the majority of course superintendents in Washington and the Pacific Northwest are WSU graduates. The program boasts one of the largest enrollments among agriculture majors at WSU and is growing. Palouse Ridge now provides that margin of excellence the program needed to grow from good to great.

Dan Bernardo, dean of the College of Agricultural, Human, and Natural Resource Sciences, said the new golf course gives WSU’s turfgrass program the opportunity to become one of the best in the country. “A facility of this caliber is a magnet for all of the ingredients necessary for a nationally-prominent program,” he said. “Good facilities help attract and retain high quality faculty as well as top students and graduate students.”

Rich Koenig, chair of the Department of Crop and Soils Sciences where the turfgrass program is housed, agrees. “Palouse Ridge is an ideal laboratory for students to learn in a real-world setting. Classes from turfgrass management to irrigation, to small engine repair and maintenance, are using course facilities as a learning environment for students,” he said.

Professors from a variety of disciplines use the course for their classes. Students in Soils 441 are studying the factors involved in fertilizer selection and application. Their counterparts in agricultural technology and production management classes focus on the irrigation and hydraulic equipment and how it works. Agronomy students use the course to identify and sample weeds and other plants, and landscape architecture students develop solutions to the design challenges on the property.

Those uses are in addition to the more traditional by the WSU men and women’s golf teams and students learning to play golf in physical education courses. All told, literally hundreds of WSU students spend some time at Palouse Ridge as part of their course work.

The value of that? Real-world, hands-on experience that brings classroom lectures to life, according to Lupkes and professors who use the course. “The irrigation class could actually come out in the field and see how things work, rather than sitting in the classroom, talking about theories and looking at pictures of it,” Lupkes said.

Senior instructor James Durfey, who uses the course for his agricultural technology management classes, called Palouse Ridge “much more than a golf course.”
This new facility is one of the finest teaching laboratories that has all of the critical elements found in agriculture,” he said. “I treat this as if it were a farming enterprise with a sophisticated irrigation system, real world management of equipment and people to provide a product to the public.

Durfey said this spring that the students in his advanced precision agriculture class will be creating a series of thematic maps of fairways, greens, tee sites and roughs on the course and then overlay that data with the irrigation system and cart pathways. The project will help in management of the golf course, but, Durfey said, “more importantly, it helps students gain an understanding of how to manage agricultural resources.”

Palouse Ridge also provides a laboratory for graduate students and professors conducting research.

WSU scientists are studying the use of black sand to accelerate creeping bentgrass seed germination and emergence on a late-fall-planted putting green. They are evaluating alternatives for snow mold control and the use of manganese to control take-all patch. And they are examining frogs and other amphibians living in wetlands on the property. Proposals are pending for other research focusing on water use and water quality on the course, as well as ways to extend the playing season into late fall and early spring.

The turfgrass management program has especially benefitted from the new course, Lupkes said. “All of a sudden, WSU’s turfgrass program is being mentioned in the same breath as Penn State, Michigan State, Purdue and Cornell,” he said. “We wanted to strengthen the turf program and its reputation, and I think it’s already doing even better than we had hoped. This university has a responsibility to train future generations about water use and turf management and there is no better place to do that than on a site that is world class.”

The course also has become a new rallying point for the WSU “Friends of Turfgrass Management” group, which has almost 300 alumni and other supporters. A primary goal of the organization is to raise scholarship dollars to support turfgrass majors.

By DENNY FLEENOR

“Green” doesn’t just refer to the putting surfaces at the Glendale Country Club in the middle of urban Bellevue, Wash. It also refers to the philosophy of the private club’s management. “It’s all a part of sustainability—for both the environment and the community,” says general manager Tom Frets, who is still an involved Coug.

“Green” also refers to the 4,000-square foot roof on the pro shop and an insulated metal roof on the clubhouse. It’s believed to be the only one of its kind at a golf facility. The $2 million renovation completed in mid-June is drawing rave reviews for its aesthetics, eco-friendliness and expected payback for club members.

A deteriorating clubhouse roof and resulting water damage prompted the renovation. Besides providing a unique and beautiful entry to the course, the new roofs are low maintenance and provide energy savings for heating and cooling. “Another benefit of the green roof is that it’s designed to filter pollutants out of stormwater before it hits the storm drain,” says Frets.

Less visible renovations included modernizing the heating/ventilating/air conditioning (Hvac) and domestic hot water systems, installing double-pane windows in the clubhouse dormers, and a more efficient gas metering system.

The HVAC and water system improvements alone should yield $30,000 in annual energy savings, resulting in a three-year payback on the investment for club members. The updated gas system is expected to save more than $30,000 in natural gas expenses.

The largest green innovations are in keeping with Glendale’s long-standing eco-friendly reputation. Course superintendent Steve Kealy, who holds a degree in agronomy from WSU, received the 2005 Golf Course Superintendents of America’s President’s Award for Environmental Stewardship. The award cited Kealy’s leadership in a rehabilitation project on Kelsey Creek that runs through the entire course.

The restoration included clearing the stream channel, bank stabilization and improving the riparian corridor through the course and on adjacent properties. “It’s pretty awesome what he’s accomplished,” says Frets of Kealy. “Kelsey Creek has one of the most productive salmon runs in King County.”

Glendale was one of the first Washington courses to complete the rigorous Audubon Cooperative Sanctuary Program for Golf Courses in 1998 and has maintained certification ever since.

The golf course is also a pioneer in The First Green, an educational outreach program using golf courses as environmental learning labs. Glendale hosts field trips where students test water quality, collect soil samples and design plantings. “We work with two high schools, providing classroom materials and funding the bus rides and field trips,” says Frets. “We encourage students to consider a career in turfgrass science.”

The club’s educational outreach also extends to WSU. “Every summer we have interns from WSU’s agronomy and hospitality programs work here,” Frets says. “It provides them with great hands-on experience.”
Living Well by Design

BY KATHY BARNARD
When you slipped into your favorite jeans this morning, a designer touched your life. As you sipped your coffee at the breakfast bar and admired the xeriscaping in the backyard, designers helped to make it possible. A designer guided your trip through the grocery store, even if you didn’t realize it.

In the Washington State University College of Agricultural, Human, and Natural Resource Sciences, the departments of apparel merchandising, design and textiles, interior design and landscape architecture are training the professionals of tomorrow who literally will help shape the way we live—what we wear and why, and where and how we live, work, shop and play. Tackling real-world issues, students get the opportunity to learn by doing in studios, gardens, office buildings and schools. Faculty members in those departments also are conducting research that helps all of us live well, by design.

But what is design? What constitutes good design? Why is it important? “Design is ultimately problem solving,” said Phil Waite, associate professor and program coordinator for LA. “Hopefully, it is problem solving in a creative way which results in a designed solution that is greater than the sum of its parts.”

Karen Leonas, a textiles scientist and chair of the WSU Department of Apparel, Merchandising, Design and Textiles, said she views design as “a process, both systematic and creative, that is used to take a concept or idea to a desired outcome. It is systematic because it involves analyzing problems, developing solutions and then re-analyzing those to find better solutions,” she said. “It is creative because you have to be able to look at things from many different perspectives and imagine how the smallest details will impact the final outcome.”

One of the greatest designers of all time—Leonardo da Vinci—was known as an artist and an inventor. But it was the elegant integration of those two talents that some of his greatest works reflect. He kept epic and detailed journals to document observations of places and people; he sketched everything from “The Vitruvian Man,” a study of proportionality of the human form, to blueprints for palatial gardens and a contraption closely resembling today’s helicopter.

Faculty members from all three departments emphasized that integration of art and science is what sets design apart from each of those fields. “I see science and art as flip sides of the same coin,” said Jolie Kaytes, associate professor of landscape architecture. “Design is an integrated practice that helps one to answer a question or solve a problem. Art needs science; science needs art.”

And a designer ignores one side or the other of that coin with serious consequences, Waite added. “Landscape architects who ignore nature will fail; so for us, the ‘science of design’ is incredibly important,” he said. “We design within the framework of science—both ‘hard’ sciences like chemistry, biology, botany and physics, as well as the ‘softer’ human behavioral sciences of psychology and sociology.”

In interior design, the science component “is an understanding of the human: how we think, how we feel, how we respond to stimuli, how we move, how we interact with each other, and how we live, work and play,” said John Turpin, chair of the WSU Department of Interior Design. “The art of interior design is the ability to create aesthetically appealing spaces while still meeting the functional needs of the space.”

And when it comes to clothing? “Design is a framework for creative problem solving that results in products that fit the wearer, the context and the end use,” said Professor Carol Salusso. The science considers the materials, structures, purpose and performance functions; the art interrelates the structure of a piece to its expression and aesthetic interpretation, she added.

Why is design important? Just try to imagine life without it, said CAHNRs faculty members. “As problem solvers, designers are important to any culture,” said Turpin. “Design facilitates human intention. We create objects at every imaginable scale—from spoons to skyscrapers—in order to enhance our existence and to help us achieve our dreams and advance as a society.”

Kaytes agrees. “Design is important because it is a practice and way of thinking that critically explores complexity,” she said. “Whether it’s trees on a street or the way a city works or how a chair supports a back, design deals with that.”

“Design is about creating meaning,” Waite added. “We live in an information age, bombarded by data. Design is about creating beauty and meaning in the midst of all that information.”
WHILE VISITING HER younger sister, Cadet Tanya McCorkle, at the West Point Military Academy in New York, Jessica McCorkle made a profound mistake based on a visual impression. “I thought she was a boy!” Jessica said of her cadet sister.

Jessica McCorkle’s mistake led her to research and revise the design of the female West Point uniform for one of her Apparel, Merchandising, Design and Textiles classes at Washington State University.

McCorkle began her research by critically examining the uniform that all female cadets are now required to wear at West Point. It didn’t take long to learn why she hadn’t recognized her own sister—the uniform’s pattern was poorly fitted to the female form. McCorkle noted that the fabric of the pants, as well as the shoulders and armpits of the blouse, were off-grain, and the shoulders were clearly structured for a masculine body type.

“The quality of patternmaking in the uniform has considerable room for improvement to provide the sharp look expected for West Point cadets,” said Carol Salusso, associate professor of AMDT and McCorkle’s research advisor.

Empowering the women of West Point

BY KATHRYN R. SULLIVAN

The pattern was made by Hart Schaffner & Marx, a design firm that specializes in menswear. McCorkle discovered the company has been creating male uniforms since World War I. “Perhaps the stylistic problems of the uniform pattern stem from the fact that it originated from a company who did not understand female needs,” McCorkle said. “This pattern has changed little over time and does not flatter or fit the female form.

“There are a lot of body issues among the West Point Academy’s female cadets, such as bulimia and anorexia,” McCorkle continued. “I believe it is because these young women lose their bodies under this uniform, and it distorts their self image.”

Giving women a properly fitting uniform could solve many of these problems, McCorkle said. And so she did just that, along with the help of Salusso. “Dr. Salusso has been an excellent resource in this project. Her internationally recognized expertise in fit and patternmaking were essential for guiding me through the process,” McCorkle explained.

But once a new design was crafted, a major problem remained: Who cares?
Electrospinning safer medical supplies

NEW FABRICS could help keep health care professionals and their patients safer in the future, thanks to the work of researchers in Washington State University’s Department of Apparel, Merchandising, Design and Textiles conducting innovative textiles research on a process called electrospinning.

Electrospinning is a method used to produce synthetic fabrics. This process differs from other methods in that electrical force, rather than mechanical force, is used to draw out polymers. The result is extremely thin fibers called nanofibers. Most other methods of fabric spinning can only produce microfibers, which are orders of magnitude larger than their nanofiber counterparts, said Hang Liu, a post-doctoral AMDT research associate.

Of the many advantages to producing nanofibers through electrospinning, perhaps the biggest is the large surface-to-volume ratio, Liu said. This produces fabrics with excellent filtration properties, which is particularly important in the medical field. When high-efficiency filtration is applied to surgical gowns, fewer outside agents are able to permeate the garment, thus increasing safety for doctors and patients.

Electrospinning could also be utilized in areas other than apparel. According to Karen Leonas, AMDT chair, textiles scientist and principal investigator on a grant to fund the research, electrospun webs may be the answer to post-surgery site infections. If an antimicrobial agent could be incorporated within a suture, it could degrade along with the fabric, and as such, would be released slowly and systematically, Leonas said. “This can’t be done with other sutures because they have to be sealed with heat, which would destroy the antimicrobial agent.”

Besides the health benefits, a reduced chance of surgical site infection would lower insurance costs for hospitals and patients. And, just as importantly, there would be great psychological benefits to this technology if it reassured a family that their loved one was safe from one of the most common complications from surgery, Leonas said.

This project has been Liu’s personal mission since 2004. Although the concept has come a long way since then, Liu said there is still much to be done in the study. “I have a passion for this, and I hope to solve many problems.”

at West Point was interested in producing a redesigned uniform, all the work was for nothing. “Dr. Salusso talked to West Point officials and would not take no for an answer,” McCorkle said.

Together, Salusso and McCorkle worked their way up the West Point Department of Logistics’ chain of command. After numerous phone calls, McCorkle was eventually invited to brief West Point officials on her research. “It was an amazing experience,” McCorkle said. “I toured the uniform factory and met with the factory manager. My sister was able to serve as a ‘before’ model so I could illustrate the logic behind my changes to the uniform’s fit.”

Implementing Change

The response to McCorkle’s research was well received. The next day, she was invited to give a briefing to the head of the Department of Logistics. Response to her research was again positive, and discussion was initiated to arrange for McCorkle to join West Point experts in evaluating and developing prototypes that will demonstrate how to correct the fit of cadet uniforms.

“One of the most exciting parts of this experience for me is that my research is actually having the impact I intended,” McCorkle said. “This is about so much more than just theory. It’s about implementing change that will empower young women.”

Cadet McCorkle is excited about her big sister’s research project. “[Tanya McCorkle] hates the [current] uniform! She would love a different one,” Jessica McCorkle said. And, West Point willing, that just might happen.

Inclusive fashion design

BY SARAH LINKER

When it comes to fashion design and functional fit, the needs of people with disabilities are frequently ignored, said Bailey Stokes, an Apparel, Merchandising, Design and Textiles graduate student at WSU. “There is some research on small children with disabilities, but other age groups have kind of been left out of the picture,” she said. Stokes, advised by faculty members Catherine Black, Carol Salusso and Marshall Mitchell, is taking an inclusive approach to addressing the issue. As part of her thesis project, Stokes is surveying individuals with disabilities across a range of ages to pinpoint the top three problems participants face with their clothing.

Early on in the survey, Stokes found that participants struggled with closures such as zippers and buttons. In addition to the frustrations these accessories cause, various designs can be dangerous, she said. “A lot of the time, it’s not the disability that affects the clothing wearer,” Stokes said. “Crutches, wheelchairs and walkers that interact with clothing can cause damage and become a safety hazard.”

By taking an inclusive approach, Stokes hopes to impact the way in which clothing is produced. Industries, for instance, may become more willing to adopt a design that is beneficial to a larger population than to a specific one, she said.

During the next few decades, Stokes predicts that inclusive design will become a more popular approach in the fashion world. “With the aging baby boomer population, it is going to be increasingly important for designers to design in a way that includes more people,” she said.

Stokes mentioned that the key to effective inclusive design is clothing that cannot be distinguished as inclusive. In the past, a lot of the clothing often looked like it was obviously made for someone with a disability, she said. “People don’t want to wear jeans that don’t look like their friends’,” Stokes said. As a side project, Stokes designed jeans that demonstrate her ideas and study feedback on inclusive fashion. The jeans include denim with spandex for added stretch, ribbon in the waistband to make grasping easier, and magnetic closures instead of buttons.

Stokes hopes her research will impact other designers. “What is also really important about the study is making the results available to design students,” she said. “As designers, we don’t intentionally exclude people with disabilities or people who have additional clothing needs; we’re just not trained to think about it.”

“Stay Put” designer is moving on up

BY SARAH LINKER

While working as a lifeguard, WSU senior Tamara Hall noticed her swimsuit lacked both structural support and comfort. “Whenever I would jump in [the pool], my swimsuit top would come up or my bottoms would come down,” she said. “I wanted to make swimwear you don’t have to worry about when you’re saving someone.”

With guidance from Professor Carol Salusso, her mentor and co-designer, Hall, an apparel design and textiles major, created “Stay Put” swimwear. “We ended up using shoelace elastic, which you can find in snowboarding gloves, for the swimsuit bottoms,” Hall said. “We also looked at different types of padding for the [bust] cups so that too much water wouldn’t get stuck in them.”

Along with functionality, Salusso said the swimwear was created to be aesthetically pleasing and eye catching. “The project was an invention where we explored various possibilities, but it was also art,” Salusso explained.

The innovative line landed Hall a two-week, all-expenses-paid summer internship in London with internationally recognized designer Zandra Rhodes. The International Textile and Apparel Association also chose Hall for one of four 2009 undergraduate awards—the first of its kind for a WSU undergraduate.

The junior “monokini” collection was exhibited in the Mom’s Weekend fashion show as well as the College of Agricultural, Human, and Natural Resource Science’s Undergraduate Creative Research Projects fair last April.

This year, Hall’s professors also nominated her for the Most Outstanding Senior award. “Tamara is a tough woman,” Salusso said. “Design is iterative. It takes rethinking, revision, thinking out of the box, and seeing what’s already been done. But there is a great need for being strong and flexible, and I think Tamara exhibits both of these qualities.”

A model wearing one of Hall’s designs.
ID students tackle redesign of iconic trailer

BY BECKI MEEHAN, WSU SPOKANE

Six graduate students from the Interdisciplinary Design Institute at WSU Spokane spent the summer with an American icon: a 1958 Airstream Overlander trailer. They had eight weeks to delve into the world of travel trailers and transform the interior into livable space, all while exploring how sustainability could be incorporated into their final product.

The 26-foot trailer was the focus of a summer design studio led by Assistant Professor Todd Beyreuther. Master of Architecture students Shona Bose, Aaron Pasquale, Jeff Smith and Brandon Patterson, and Master of Interior Design students Ashlee Holtman and Kait Tripp-Addison not only redesigned the trailer, but helped solve global and economic issues related to mobility and living in small spaces.

“The design will likely be a fluid, digital form within an American icon of manufacturing and mobility with its aluminum skin, rivets and curves,” said Beyreuther at the beginning of the project. “We don’t want to touch the iconicity, but we do want to address some of today’s large-scale issues with the new design.”

The team of students took on the management roles of construction, marketing, social media, financing, digital modeling and manufacturing to simulate what they would normally experience in their practicing professions. The course concentrated on the design transformation of the Airstream’s interior components while preserving its historic exterior character.

With the latest technology in their hands, the design group had the means to digitally map the surfaces to 1/100th of an inch and later create a 3-D digital design to give exact specifications directly to manufacturing for a perfect fit of the new materials.

“It’s a great opportunity for students to explore global-scale issues of sustainability and mobile lifestyles through a design-build project that focuses on product design, materials and manufacturing at a scale much smaller than typically addressed in architecture and interior design,” said Beyreuther.

Marketed as one of the lightest travel trailers on the road, the original logo even depicts a person on a bicycle pulling an Airstream. This project took that concept one step further by introducing the possibility of an off-the-grid trailer with style and convenience.

O ver the past year, a portion of the 1894 WSU Puyallup Research and Extension Center has undergone a significant makeover. Among other things, its old parking lot has been replaced with, well, a parking lot.

But it’s not just any parking lot, according to WSU Pierce County Extension educator Curtis Hinman, a leading expert on low impact development. It’s part of a full-scale laboratory for researching how best to manage stormwater runoff that contributes to polluted waterways, and likely one of only two facilities of its kind in the world.

“We’ve installed permeable materials, both concrete and asphalt, with separated cells from which we can collect water quality samples. That means we can conduct replicated tests on water quality and water flow,” says Hinman. “We’re collecting rainwater from our building rooftops, so we have the ability to put pollutants on the surface, apply measured quantities of water, then collect the effluent and test how well different materials filter it.”

Stormwater picks up grease, oil, heavy metals and other pollutants as it runs off buildings, parking lots and roadways. The runoff ends up in streams, lakes, rivers, and ultimately marine bodies like Puget Sound. The Puget Sound Partnership, the state agency charged with restoring the environmental health of its namesake, considers managing polluted runoff a priority challenge.

The Washington state Department of Ecology, which provided the grant for the makeover through the city of Puyallup with matching funds from WSU, is developing regulations for construction and land development to reduce environmental impacts. Former state ecology director Jay Manning told a reception last fall that the research at WSU Puyallup will help ensure that the regulations will be on target. “One of the most difficult challenges that we have as an ‘ever popular’ regulatory agency in driving forward stormwater regulations is that we are in short supply of answers,” Manning said. “This is a place that is developing and providing answers that will work for people in the real world.”

In addition to the parking surfaces, the project involved installing 16 full-scale rain gardens to research various combinations of grasses and shrubs for their abilities to filter pollutants from stormwater.

Then there are the mesocosms, 16 tanks that are 42 inches deep and five feet in diameter. They are being used to test the filtering capabilities of different blends of soils planted with a constant plant palate. As with the paving materials, these facilities have the capability to be treated with measured quantities of water and pollutants, with the effluent collected to measure effectiveness, according to Hinman.

“There has been a lot of excellent work done on stormwater, but much of it is lab scale in small containers, or at different locations with differing conditions,” says Hinman. “The thing that’s unique worldwide about this facility is that it allows full-scale tests that can be replicated.”

Additional project information, photos and videos are available at http://bit.ly/abPACR.
A green roof grows in Pullman

BY BRIAN CLARK

THE SITE OF THE Horticulture and Landscape Architecture Display Garden, just east of the Lighty and French Administrative buildings on Washington State University’s Pullman campus, continues to be a hot spot of innovation. The latest development on the site of the old greenhouses is an equipment storage building sporting a “green” roof.

Green roofs serve several purposes for a building, such as absorbing rainwater, providing insulation, creating habitat for wildlife, and helping to lower urban air temperatures and combat heat island effects caused by building materials that retain heat.

Phil Waite, associate professor of landscape architecture, explained the two basic types of green roofs. Intensive roofs have a thick layer of soil that, while supporting a large variety of plants, require extra structural support in the buildings they cover. Extensive roofs have a thinner layer of soil and support a smaller selection of plants, but have largely the same benefits. Waite said that extensive green roofs are the wave of the future because they are easier and cheaper to implement than intensive ones.

The green roof in WSU’s display garden that is covered with sedums and dryland grasses is the first extensive green roof on the Pullman campus, said Waite. The garden, designed and built by students under Waite’s supervision, is intended to present a reproducible model of sustainability for gardening and building in the Palouse climate.

“Green roofs slow runoff,” said Waite. “The rainwater is captured and reused. The soil and plant material on the roof actually protect the roofing materials, extending the life of the roof by as much as 50 years. And heat gain is reduced by up to 20 percent. In an urban setting, green roofs reduce the effects of heat islands.”

Portland, Oregon, is a nexus of green roof projects, Waite said. “We took the students there to show them examples of good design. Then they came back to [the Pullman] campus and designed and built the equipment building and its green roof.”

Next time you’re on campus for a game or a reunion, stop by the garden and relax for a while. The benches, raised garden beds and pathways are all constructed with recycled materials from the old greenhouses and other campus projects further adding to the sustainable nature of the display garden.

For a video tour of the garden, check out http://bit.ly/ad2ZBO.
WSU alumna seeks to further interior design field & careers

BY WHITNEY PARSONS

“I am a big believer in the idea that you get out of something what you put in,” says Sari Graven (WSU Interior Design class of ’78), national president of the American Society of Interior Designers. “I have spent a lot of time giving my time and talent to ASID, beginning with my student membership at Washington State University. I have received back even more: knowledge, perspective, mentors, friends, new skills, insight and fun.”

The ASID national nominating committee chose Graven as president based on her belief in the organization and desire to give back to her profession. Previously, she held both chapter- and national-level positions in ASID. In addition, she’s been active in the Council for Interior Design Accreditation (formerly known as FIDER) as a member of their Board of Visitors and past chair of the Standards Committee. Graven has also held various leadership positions at architectural firms throughout her career. She’s currently director of program and resource development for Facilities Services at Seattle University.

Strategic Goals

As ASID president, Graven said her purpose is to implement their strategic plan, which focuses on building a uniform brand culture, supporting designers’ ability to practice through legislation, and strengthening the potential of ASID as a professional organization. “At the end of the day, we judge our efforts against our values,” said Graven. “It’s my job to make sure we live up to these values through the strategies identified in our three-year strategic plan.”

Graven said being president of a national organization means always considering the needs of the members first, which can require putting her own views aside. “This position is an educational, humbling, fun, scary and sometimes overwhelming experience.”

Before the Internet

Graven recalled that her time at WSU helped make her “very resourceful when looking for input and inspiration from the outside world. Pre-Internet, when the interior design department was located exclusively on the Pullman campus, the isolated location made access to vendors and resources a challenge beyond the rigors of classwork.

“Interior design is a tough program. It asks a lot of its students, many of whom spend countless studio hours together bonding into relationships that for me have lasted 30 years beyond my time at WSU. It is the love–hate time we all spent together in studio that I look at with greatest fondness.”

ID Career Options

A degree in interior design can open many paths, Graven said, both traditional and non-traditional. Examples include working as a designer, project manager, interior sustainability specialist, planner, programmer, team leader, group facilitator, as well as research and teaching. Other options include going into sales for a variety of areas related to interior design, such as furniture and materials. Many also work in specific areas they are passionate about, such as art, lighting or even change management. “For years I’ve said that the whole world is seeking the fundamental skills designers use every day: namely, the ability to facilitate creative problem solving within multi-discipline team-oriented environments,” she continued.

Graven’s advice for aspiring designers is to “work very hard while in school, as it will prepare you for a profession that works even harder. Have fun. Be flexible. You never know where an idea will come from—but it is likely to be during time spent working with others. Get out there. See the world, expand your backyard and seek out inspiration.”
Girls Council promotes strong women

BY TONY DROVETTO

SINCE SEPTEMBER 2006, a Walla Walla Valley program has offered struggling area youth a new chance. Girls Council is a nonprofit organization that uses facilitated groups to empower girls ages 9–18 by increasing their self-efficacy, body image, and connection with school. Washington State University alumna Becky Renwick has been with the council since its inception.

“Professional women in the Walla Walla Valley community who understand what girls are facing today came together,” said Renwick, a full-time juvenile probation officer and treasurer on the Girls Council executive board of directors. “We formed the organization because of our passion to break the cycle of dysfunction,” she explained. Renwick graduated from WSU in 1997 with a degree in human development.

“Girls are referred to the program by teachers, parents, caseworkers and probation officers,” said Renwick. “The groups are facilitated by female role models that help girls to develop skill sets, an inward awareness of their emotions, and how those emotions lead them to behave in certain ways.”

Renwick attributes the behavior issues of school-age girls to problems they may have suffered several years ago. “We see that girls who have been victimized early in their lives are prone to depression, substance abuse, abusive partner relationships, pregnancy, running away, self-mutilation and truancy,” she said.

“Of the 102 girls who have completed Girls Council groups, 85 came to us on either probation or diversion for a criminal charge; after the 12-week program, only 13 have re-offended,” said Renwick. Diversion plans enable offenders of criminal law to avoid charges if they attend an educational program. Girls Council is now working closely with school counselors and psychologists to reach girls before they commit a crime or have significant truancy problems, said Renwick. “We want to be at the forefront to stop the trauma and dysfunction early.” To help make that happen, the Girls Council teamed up with local community centers, middle and high schools, and after-school programs during the 2009–2010 school year.

Future Plans

The newest undertaking at Girls Council is the Cottage Project, which will provide a long-term residence to girls in the Walla Walla Valley community facing ongoing risk of physical and emotional harm. “The Cottage Project will offer a home to girls age 12–17 without a stable nurturing familial environment,” said Renwick. Residents will have their own bedroom and attend school. “If needed, they will receive drug and alcohol treatment or mental health counseling.” Extracurricular activities will include areas of interest such as sports, rodeo, 4-H, volunteering, cooking and sewing, she added.

The greatest challenge facing Girls Council today is a lack of funding, which is primarily from grants and donations. Construction on the Cottage Project has not yet begun, but a committee is in place that has found a local builder who is committed to donating his labor, said Renwick. “The Walla Walla Valley recognizes the impact Girls Council has made and support our efforts on the Cottage Project. We are working every day to access funding to provide for our girls.”

More information about the program is available at www.girlscouncil.org.
CAHNRS student award winners

THE WASHINGTON STATE UNIVERSITY College of Agriculture, Human, and Natural Resource Sciences honored its best and brightest at the 51st annual awards banquet held in April. Hundreds of students, family members, faculty and staff gathered in the Ensminger Pavilion to celebrate the year’s accomplishments.

**AGGIE OF THE YEAR**

Derik LaFave graduated in May with a B.S. degree in both Agricultural Economics and Crop Sciences. He maintained a cumulative 3.91 GPA and was on the President’s Honor Roll every semester. LaFave completed summer internships with the J.R. Simplot Company, Cenex Harvest States, and Wilbur-Ellis which allowed him to gain hands-on experience. LaFave also completed an undergraduate research project under Dr. Michael Neff that focused on plant biotechnology with a mutant screen involving Arabidopsis seedlings.

**FAMILY AND CONSUMER SCIENTIST OF THE YEAR**

Mauricio Cifuentes-Soto, a native Colombian majoring in economics, is also a cheese maker at the WSU Creamery and involved in the International Students’ Council and Student Entertainment Board. In 2007, he was elected ASWSU Senator, one of the first international students to hold the position. He has served on the President’s Student Advisory Board and Counseling and Student Health Advisory Committee and received both the president’s and dean’s awards for leadership and service to the university. Cifuentes-Soto wrote a summer column at the Daily Evergreen called Cougonomics, and plans to enroll in a public policy program this fall.

**ALPHA ZETA’S ARNOLD KNOPF OUTSTANDING FRESHMAN**

Randi Hominda is focusing her studies in Family and Consumer Sciences Education. She has been an active volunteer in her hometown of Bethel and now in Pullman. She established and serves as the president of the WSU Waterski and Wakeboard Team and was recently selected to serve as a CAHNRS Student Ambassador.

**OUTSTANDING JUNIOR IN HUMAN SCIENCES**

Lauryn Ringwood’s interest in mathematics, human behavior, and understanding the big picture attracted her to the field of economics. She studied abroad for a semester in Florence, Italy, as part of a program through the School of Economic Sciences. Ringwood has found her understanding of economics to be useful for both agricultural jobs and an internship with the U.S. Department of Energy.

**CAPITAL PRESS OUTSTANDING JUNIOR IN AGRICULTURE**

Casey Lawson is studying Animal Sciences with a pre-veterinary emphasis and minor in Spanish. Her professional goals include completing a joint DVM-PhD program and specializing in large animal medicine. She has been on the President’s Honor Roll since 2008. In addition to serving as treasurer of the Collegiate Horsemen’s Association and a member of Palouse Area Therapeutic Horsemanship, Lawson volunteers each week at Orphan Acres Horse Rescue and Rehabilitation Center. Her research focuses on comparative genomics in salmonoids under Dr. Buel Rodgers’ supervision.
Front Row (Left to Right): Richard Dreger, Jim Quann, Larry Foster, Anita (Kanzler) Foster, Venita Bafus, Sandee (Strand) Kerr, Elaine (Widmer) Carey, Joe Coombs, Myron Swanson, Ron McClellan, Diane (Solberg) Triplett

Middle Row (L to R): Allen Lewis, David Moore, Jerry Anderson, Erlene (Barnes) Courtney, Beverly (Roberts) Kent, Ilene (Jacobson) Freeman, Gwen (Ganus) Olsson, Ginny Nelson, Bernie (Kluge) Terry, Jean (Smith) Groeneveld, Wiard Groeneveld, Jim Moore

Back Row (L to R): Larry Coppock, Dave Myers, Dan Birdsell, Walter Roys, Steven Aust, Don Schultz, Lloyd Osborne, Rick Ross

Front Row (Left to Right): Dave Abbott, Arlene Anderson, Jean (Hamerly) Myre, Martha (Lancaster) Kemp, Jo Ann (Lounsbury) Kettel, Jannis (Crow) Snook, Suzie (Simpson) Loihl, Betty Jo (Baker) Barney, Ruth Norman, Patricia (Rowan) Fredricks, Bruce McCaw

Back Row (L to R): Dick Sterling, John Sandor, Roy Goss, Mary (Lange) Gard Kuhlman, Howard Ferguson, Barbara (Fort) Hisel, Dick Juris, Laura (Lee) Miller, Liné Estergreen, Felix Entenmann, Joan (McAlmond) Pelto, Wallace Middleton

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