As King County’s farm specialist, Steve Evans ’78, ’82, has watched agriculture disappear from the area. But now some of the land is going to smaller farms with high value crops. Meanwhile, small farms agent Bee Cha helps East African refugees farm in the urban Pacific Northwest.

by Hannelore Sudermann

If only we could simply grow our own fuel. Washington State researchers are looking at the possibilities. By Eric Sorensen

The Food Quality Protection Act of 1996 initiated the gradual phasing out of organophosphate pesticides. By 2012, the major chemical defense against wormy apples will no longer be available. But not to worry, thanks to a continuous refinement of Integrated Pest Management and collaboration amongst growers, industry fieldmen, and WSU researchers.

by Tim Steury

Shakespeare often lits in terms of convincing natural description. His Forest of Arden is praised for what it isn’t rather than what it is. By Will Hamlin

Hans Breivik ’88—About a bridge

Kevin Tomlinson ’75—Back to the garden

Jeanne Lewellen Norbeck ’33—Recognition at last

Edward Claplanhoo ’56—Bah-duk-too-ah: August 8, 1928–March 14, 2010

Cover illustration: Stone City West by Robin Moline.

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The Cultivated Landscape :: One place you must add to your “must-visit-before-I-die” list is the Wenatchee Valley during full bloom of the pear and apple orchards in late April. Perhaps you’ve seen Van Gogh’s lovely, but not often reproduced, painting “The Pink Orchard.” It’s very simple, a small orchard in bloom. But it’s so simple and lovely it will make you cry with desire. Now imagine it juxtaposed with one of those sublime Western landscapes by Bierstadt. Impossible? Of course. But keep trying. Imagine these vast orchards, all in bloom. And behind them loom the magnificent Cascades, still etched with late spring snow. Once you have it in focus, you’re looking at the sublimely perfect juxtaposition of the natural and the agricultural.

There are other such places as well. A newly harvested potato field in northern Ukraine, bathed in warm October light, bordered by not quite familiar hardwoods, Ukrainian species of oak and maple, the onion dome of an Orthodox church hovering on the horizon.

The gently rolling mixed pasture, apple orchard, and woods, interspersed with half-timbered houses and brown and white Norman cows, the hedgerow-lined narrow roads of the bocage region of Normandy.

An Indiana bottomland hayfield on a mid-summer evening, the windrows curving gently into the shadows of honey locust and box elder that separate the field from the river, the intoxicating scent of fresh-mown hay permeating the humid evening air, a bouquet as integral to the landscape as the light of dusk.

And another landscape, more recent, added to memory. The precise geometry of the parallel rows and the deep blue green of Walla Walla Sweet Onion fields have always attracted my fancy. But now that I have visited with some of the onion farmers, now that I know some of the crop’s history, of its Italian immigrant growers, the landscape now instills a much deeper aesthetic in my mind.

It may be true, as evolutionary psychologists suggest, that the African savannah prompts an ancient love, that all of us carry an archetypal memory of that open landscape’s appeal. But I believe the most beautiful landscape is one that blends the cultivated with the natural. Even monoculture holds a certain beauty, at least if framed against, say, the low forested mountains of the eastern Palouse—though endless miles of winter wheat depend to a large extent on the play of light and wind for their aesthetic appeal.

More beautiful—and I realize I’m entering an entirely subjective realm—are the locally consumable, the diverse, the old. Landscape that clearly defines the region, its food, its history, its culture. Cows grazing on an impossibly steep pasture in the Alps. Ancient rice paddies on the plains south of Bangkok. The old farm orchards of the upper Midwest.

It must be either age or appetite, with their irksome intimations of mortality, that drives one to seek meaning amongst the levels of landscape, to imagine, with deep satisfaction, one’s place when landscape, culture, history, food, all blend into one. But perhaps that is simply the definition, the emotion, of home.
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August 2010

Dear Alumni and Friends:

A little more than three years ago, I returned to Washington as president of Washington State University. For me, one major attraction of WSU was its long-standing commitment to its land-grant mission—extension and agricultural research.

Sitting in my office in Pullman, I have a sense of the impact that our university has across our state. However, the only way for me truly to understand and experience the difference that WSU is making in people’s lives is to hit the road.

So, this spring and early summer, I visited counties in every region of Washington as part of our Community Engagement effort. By the end of 2010, I plan to have stopped in all 39 of Washington’s counties. On the visits, I meet with the staff at WSU Extension offices. I talk with business, education, and community leaders. And, at open forums, I meet Cougar alumni and friends and update them on our progress as a university.

It is a considerable time commitment. I can assure you, though, that every minute is worth it.

On these trips, we hear from small farmers who are energizing local sustainable farming efforts with the help of WSU agricultural researchers and extension agents. We hear from young people who tell how 4-H has helped give them direction and self-confidence. We hear from people in some of Washington’s most economically hard-hit counties who appreciate WSU’s grass-roots efforts to help diversify their economies and develop community leaders.

The stories are inspiring. They provide me with first-hand knowledge of what WSU is doing and needs to do to fuel our state’s economic rebirth. I also hope that the people we meet come away with the sense that WSU cares about their community. We’re building relationships, building partnerships, and, in the process, we believe we are building a better Washington.

People in those same communities, of course, send their daughters and sons to WSU; over 85 percent of our students come from the state of Washington. Fall is upon us, and that means a new group will be joining the Cougar family. Even in the face of economic uncertainties, we continue to experience high demand for a WSU education.

As I meet our new students, I am always struck by their sense of optimism and infinite possibility. Whether I am at town halls in Port Angeles, Stevenson, Collia, or Yakima, or on our campuses in Pullman, Spokane, Tri-Cities, or Vancouver, the message I hear is similar. People are counting on WSU to help them make their lives better.

My message to them? We are not going to let you down.

Warm regards,

Elson S. Floyd, Ph.D.
President
Holly Ferguson knows her cow pies about as well as anyone. In the first study of flies in managed pastures in the Pacific Northwest, the entomologist has spent an unusual amount of time traveling the state and assessing its cow pies.

No matter the obvious jokes, dung dispersal in pastures is serious business. Wherever there are cows, there will be cow dung, and lots of it. A beef cow can produce nearly a ton of manure per month. And if that ton sits there untended, there will be problems.

Oddly enough, the conditions of the cow’s other major habitat, the feedlot, reduce the problem of dung dispersal, at least from one perspective. The constant crowded trampling of the feedlot cows eliminates the pasture’s particular dung problems.

Unattended cow pies in a pasture are a rich breeding ground for cow pests and parasites. Also, rather than fertilize the pasture as it would once it broke down, the inert dung is actually toxic to the pasture and stops grass from growing.

Fortunately, the cow pie in its natural state is generally, and eagerly, consumed by a wide number of insects, including the appropriately named dung beetle and any number of Diptera, or true fly, species. (Tidying pastures is such a priority that Texas, for one, imports dung beetles from Africa.)

And so, with various cohorts, Ferguson set out to address a widespread concern about the effect of parasiticides on the cow pie ecosystem. If the researchers could come up with a solid recommendation regarding the use of parasiticides in pastured cattle, went the rationale, the logical outcome would be healthier pasture ecosystems.

Part of this story resides on a large cattle ranch in Hawaii. WSU entomologist Laura Corley Lavine is interested in dung fauna, the creatures that inhabit the pie, particularly beetles.

She is also interested in whether the dung beetles have any effect on pest species and has conducted research on the Kahua Ranch on the Big Island. Realizing the importance of cow dung dispersal, Tim Richards ‘84 DVM, a family partner in the ranch, had observed the negative effect of parasiticides in the ranch’s cattle on the resident dung beetles and so had established a special formulation for the ranch’s cattle.

Hawaii has no native dung beetles, so it had imported them from Africa and Mexico. Because of Richards’s care, says Corley Lavine, the Kahua Ranch has a “fabulous” population of beetles. “He has no manure in his pastures, the beetles get rid of it so quickly.”

However, says Corley Lavine, in Prosser, where Ferguson is stationed at the Irrigated Agriculture Research and Extension Center, they tried the formulation advocated by Richards and found no difference in the effect on beetle populations. “Ranchers around here,” she says, “if you tell them you work on dung beetles, they say...”
Recruiting rural health care providers

by Larry Clark ’94

When the quirky comedy

Northern Exposure, an isolated Alaskan town

entered a New York City doctor to become the community’s physician. While the city’s doc angst and the eccentric residents—including a moose from WSTU—drew laughs, the show highlighted a real challenge faced by many small towns and rural areas recruiting and retaining doctors and nurses.

There’s a shortage of all health care providers: physicians, nurses, all of the technical programs,” says Gary Smith, a senior project associate with the Area Health Education Center (AHEC). "The demand will increase even more when the economy turns around and people want to retire.”

AHEC, a division of WSTU Extension that works on outreach with the health science programs at WSTU Spokane, helps recruit health care providers for rural and underserved populations. Their mission is increasingly critical. A 2008 University of Minson study estimated a shortage of 44,000 general practitioners in ten years, a crisis that hits rural areas even harder with their aging population and difficulties in drawing in new health care workers.

In 2005, there were 55 primary care physicians per 100,000 persons in rural areas, not nearly enough to provide the same care as in urban areas, according to Mark Duoscher, a doctor and director of the AHEC in the Intermountain West’s rural health research unit. For registered nurses, the projected number of vacancies eclipses available RNs by 2020.

"It used to be that you had a primary care practitioner, and then you had a general surgeon, and that was kind of the delivery that happened in the rural areas,” says AHEC project associate Bettie Randlett. "You don’t even have the general surgeons anymore.”

Over the last twenty years, the number of health care students in the United States choosing primary care careers in rural areas has declined precipitously due to a number of factors: lower compensation for primary care, professional isolation, fear of off-the-books, less specialty support (especially for mental health services), and lack of respect among peers.

"I think there’s a perception sometimes that the health care you receive in a small community isn’t on a par with a bigger city. That’s absolutely not true from my perspective. A family practice doc who’s out in Grand Coulee or Republic has to deal with everything,” says Randlett.

AHEC project associate Bonnie Wagner identifies the further challenges of the spouse’s employment and education of their children. "Not only are we asking physicians to go to these rural, isolated, pocketed areas, but we’re also asking them to bring their families,” says Wagner.

Changing demographics in rural Washington add cultural and linguistic challenges to recruitment of doctors and nurses. Despite very good clinical outcomes in rural hospitals, there are huge health disparities documented within increasing Latino and other ethnically diverse populations. Randlett says, "If they don’t have a provider from their same population, they’re less likely to go. That’s one of the things that we try to work on, talking to students from an ethnic minority background to get them better represented in the health care workforce.”

To recruit doctors, nurses, and other health care providers who agree to work in underserved and rural areas, the Northern Exposure town—played by Boyd’s Washington home, once a loan repayment program, but he grew to love the place. "In exposure, you grow a lot. It’s a big area so you help retain doctors and nurses. As Smith says, “Getting people out there in the biggest recruitment. Communities have to look good.”

A measure of time and history

by Hannes Sadermann

Matthew Cohen started wondering if what he knew of Renaissance architecture was true when he stepped into the San Lorenzo Basilica in Florence with a measuring tape.

“The Italian city, known as the birthplace of the Renaissance, is home to many of the great works of Filippo Brunelleschi, perhaps the foremost engineer and architect of the period. And San Lorenzo has been studied by generations of architects and historians as one of the earliest examples of Renaissance perfection.”

It is one of the most famous buildings in the world,” says Cohen, an architecture instructor at WSU Spokane. He first encountered the church when he was a graduate student visiting Italy. He had been asked by his professor to present on the site to the de Medici family, construction on the church had been started in 1420, on the site of a Romanesque style church from 1050. The new building, which was funded by the de Medici family, was built right at the threshold of the Renaissance.

Cohen had read about the structure and its proportions—its symmetry and geometry. “I was blown away,” he says. So he took the tape measure to the church and, with the tourists around him, recorded a few measurements.
Matt Cohen studies architecture up close in Florence. "I was conducting above-quality was inconsistent in design and execution. The inspection caused him to wonder all the more. "I didn't expect so many," says Cohen. "So what kind of proportional system fit the written descriptions, particularly with banners were hung, masons' tool marks, and little more detailed than you would imagine," says Cohen. "Numbers started appearing. Patterns started emerging." The ratio of one to the square root of two was everywhere. "Why did they use these proportional systems," he wonders. "Why bother?"

Cohen realized he had a rare privilege. Millions of people had been on the floors of these churches, but hardly anyone had been up high since the time they were built. "When you get up there, the capitals are much bigger and much more detailed than you would imagine," says Cohen. "Spines," he says. "Numbers started appearing. Patterns started emerging." The ratio of one to the square root of two was everywhere. "Why did they use these proportional systems," he wonders. "Why bother?"

Cohen found plans and numbers connected to San Lorenzo that dated to 1418, before Brunelleschi was hired to the job. That beggared perhaps his biggest and most controversial question. Was this church designed by Brunelleschi or wasn't it? "This challenging one of the fundamental assumptions of architecture history," says Cohen. The architect started working out the mathematics. He took his measurements in braccio, a measure of length used in architecture. Cohen also found that his measurements didn't fit the written descriptions, particularly with numbers started appearing. Patterns started emerging." The ratio of one to the square root of two was everywhere. "Why did they use these proportional systems," he wonders. "Why bother?"

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renovation, there are 24 racks for each of the three powerlifts, and there are new sets of solid rubber weights for each rack. A set of TR straps, a new suspension training system of nylon straps that allows athletes to use their own weight to do a range of exercises, is also installed at each station.

Despite the presence of more equipment, the layout has been altered to open things up and allow more space for athletes to move around. “We can safely and effectively train up to six teams at one time and up to 130 athletes on the first floor alone,” says David Lang, director of strength and conditioning.

All 450-some students in athletic programs at WSU can use the enhanced stations to better design their workouts to the demands of their sports. “The student-athletes are able to complete an entire strength training workout without ever leaving a rack,” says Lang.

The new setup is better for everyone, says football coach Paul Wulff, who played center for the Cougars from 1986 to 1989. Instead of working the players out over a six-hour period, the coaches can work them out over three hours. “Our weight room allows for better communication,” he says. “Now the players face each other, and our coaches can see things better.”

The new spaces and machines are not only key to recruiting, but crucial to helping the students do their best while they’re here, says Moo E. WSU’s newly-hired athletic director who spent some of his own time as an offensive lineman for the Cougars in the 70s.

In his day there was nothing like the hydrotherapy complex, which sits between the Hollingbery Fieldhouse and the Mooberry track. The resource, which opened in 2008, features an underwater treadmill where an injured athlete can submerge up to his or her shoulders and get a cardiovascular workout without putting much stress on an injury. The space also has a cold plunge and a warm therapy pool. It not only helps athletes rehabilitate, it also enhances their overall training efforts.

Among other surprises scattered around campus is an indoor rowing facility for the women’s crew team. With two pools, each just wide enough to accommodate the length of an oar and long enough to fit a line of eight, the coach can get up close to the athletes and keep an eye on their form and technique. The $1.2 million project was completed in 2009.


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in season

Walla Walla SWEETS
by Tim Steury; photos Chris Anderson

WHEN RETIRED FRENCH SOLDIER PETE PIERI settled in Walla Walla around the turn of the 20th century, he planted onion seed he had brought from France. His new neighbors, Italian gardeners who had settled there earlier, admired the ability of the onion to winter over in the ground, which gave it a good size for an early summer harvest. The historic Walla Walla horticultural historian Joe Locati, was its mild flavor. The Italians called it the “French onion” (though it was actually Italian), and by 1930, it was about the only summer onion grown in the area.

Locati worked with WSU Extension plant pathologists Marion Harris, Seth Locke, and Otis Castoldi ‘83, a descendant, like Locati, of one of the first Italian families to start farming around Walla Walla, farms with his brother Bob and nephew Nathan. This year they have about 26 acres of Walla Walla Sweets, which he will begin harvesting in less than a month.

Castoldi, a 3rd-generation onion grower, like Locati, says Castoldi, you can get 2,000-4,000 50-pound bags of onions per acre.

Growing Walla Walla Sweets is not something you just jump into. The timing and observation required for correct planting and subsequent crop maintenance are not things you get from an instruction manual. Onions require a lot of hand labor, including at least one, sometimes two, hand-weedicings. Although storage onions can be harvested by machine, Walla Walla Sweets are too small. Some growers hand-harvest much of their crop directly, aims to spread the harvest as long as possible, using different strains of the sweet onions to stretch the season from mid-May to mid-September.

In spite of their long and savory history, Walla Walla Sweets were not called Walla Walla Sweets until 1960, when the Arbini brothers were asked to ship samples for possible markets on the East Coast. Caroline Arbini and her sisters came up with the name to attach to the samples.

Walla Walla Sweets make up only about 10 percent of Washington’s total onion production, the remainder being primarily yellow storage onions. The high water and sugar contents that make Walla Walla Sweets so sweet and mild also mean they do not keep. So eat them when they’re ready, which is mid-June through September.

“Twenty-five years ago, when they packed them, they owned them,” he says, referring to the transfer of the onions from field to packhouse. “Then somebody got ingenious and decided they’d become custom packers. Now basically you own them all the way,” shifting the brunt of the risk to the growers.

Within that framework, Arbini plans his crop for a quick harvest turnaround. Castoldi, who makes much of his crop directly, aims to spread the harvest as long as possible, using different strains of the sweet onions to stretch the season from mid-May to mid-September.

Each family would select their own seed, have their own variety,” he says of the local tradition. “My dad and uncle started selecting, especially for a super early variety.” That May morning, he had been harvesting early spring salad onions.

Other regions of the country might boast their own sweet onions, but never Walla Walla Sweets.

“Other than the Idaho, most of the other states can’t grow Walla Walla Sweets, or if they grow them, they’re not in the right area,” says Locati. “We have a good growing area, so we have onions, and we can harvest them in the right time frame.”

Under a federal marketing order established in 1995, Walla Walla Sweets can be grown only within the Walla Walla Valley, north to the Tucannon River and south just into Oregon. Anyone outside that area can grow Walla Walla Sweet seed, but they can’t use the name. Still, some unscrupulous vendors will try to pass off other onions as Walla Walla Sweets. When reports of pretenders come in to the Walla Walla Sweet Onion Marketing Committee office, executive director Kathy Fry might jump on her Harley and head out to investigate. Usually, all it takes is a warning, says Fry, but if the offenders persist, the committee has the USDA to back them up.

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Locati, in his excellent horticultural history of Walla Walla County, 1888-1977, writes about the arrival of white rot. Locati was a state inspector in 1959 and noticed a “burned-out circle” in one of his neighbor’s onion fields. After pulling up a few onions, he found white mold and embedded spores. “That dazed white rot was here!”

Locati worked with WSU Extension plant pathologists Marlin Harris, Seth Locke, and Otis Malay, and agriculture dean Louis Madson and others to contain the white rot. Eventually, they developed different cultural and chemical practices to check the disease—though once in a field there’s no getting rid of white rot altogether.

A video recipe for grilling Walla Walla Sweet Onions is available at wsm.wsu.edu.
Too much of a good thing

by Eric Sonnen

Science has been predicting and measuring our warming planet for more than a century now. But it was only in the last two decades that most Americans came to believe the earth's temperature was indeed rising and that the main culprit is the growing amount of carbon dioxide in our atmosphere. Now scientists are giving a lot of thought to another culprit: nitrogen. Like carbon dioxide, it's usually thought of as colorless, odorless, tasteless—and a foundation of life on our planet. Left alone, it tightly binds itself to inessent, two-atom molecules, or N2. It's visually commonplace, making up four-fifths of our atmosphere. It's also a modern mineral synthesized into fertilizer, it has revolutionized agriculture, often with the help of Washington State University researchers. But it's a very, very lot of nitrogen to go bad, as happens most when nitrogen-based fertilizer is not assimilated by a plant and starts roaming the planet in other forms. As nitrate fertilizer, or NO3, it can end up in drinking water and contribute to multiple health problems. In surface waters, it stimulates blooms of aquatic life that tend to decompose, removing oxygen and creating hundreds of "dead zones" devoid of marine life. NOx, the collective term for nitric oxide and nitrogen dioxide, contributes to low-altitude ozone, a significant greenhouse gas. NO3, like CO2, is a major contributor to global warming. This makes it a "key player" in the global warming discussion, says Brian Lamb, an atmospheric scientist and principal investigator for a $3 million program that teaches graduate students about climate science and public policy to students in a range of disciplines. "And the human part of that is we are big users of nitrogen fertilizers. The more nitrogen you apply to an ecosystem, even an agricultural ecosystem, the more NO3 gets released." But like everything, says Cousin, "with too much of a good thing, you then become limited by some other factor in the environment." In the Science paper, one new limit appears to be the plants' assimilation of nitrate. "In some ecosystems the dominant form of that nitrogen is nitrate," says Cousin. "And so now there could be this additional limitation. The nitrate could be in the air, but it's not readily being assimilated."

Fritz Haber and Carl Bosch's process converting nitrogen to ammonia changed that, as can be seen when Lamb calls up a chart showing the planet's nitrogen oxide budget. The earth's atmosphere can process about 14 of the nearly 100 million tons produced each year by natural and human sources. That leaves 4.9 million tons added each year. It's almost the equivalent of the amount used for fertilizer. "Building a society based on fertilizer is not absorbed by plants. When it comes to NO3, to the places people are looking to make changes," says Lamb.

That will be tough. The Haber process helped the world population grow from less than 2 billion to nearly 7 billion, with more on the way. All these people will need amino acids to thrive, and almost all amino acids come from crops and the animals that eat them.

The biggest effect is in the enzymes needed for photosynthesis, says ecologist Dave Evans (PhD Botany). "They take a lot of nitrogen. So when farmers are applying nitrogen, they're trying to increase photosynthesis so they get more growth. They want green plants."

But for all the nitrogen farmers use, less than 30 percent ends up in the grain. One study at WSU's Cook Agronomy Farm estimated 5 to 10 percent of the nitrogen ended up as nitrate in nearby surface water. USDAlARS soil scientist Dave Huggins (PhD Plant Soil Fertility) notes that the most efficient way to use nitrogen is to apply it at one spot to an "attainable" region because yields would otherwise fall as carbon dioxide levels rise and the product of that rise in carbon dioxide are incredibly inconsistent across a farm. On the 52-acre Cook Farm, wheat yields can double from place to place on the farm, as little as $1.5 million in 1940-70. Sales increased from there, growing an average of 20 percent a year, reaching $17.5 million in 1982. But Charbonneau's major contribution was significantly. "This profile of fewer growers, but larger products, from your hand-processed strawberries to the dried "blueberries" in your breakfast cereal, which are actually colored dried fruits. But Charbonneau's major contribution was the introduction, following the citrus industry's trend of frozen concentrated juice. Not only did he convince more and more consumers to consume immediate to immediate consumer approval, greatly reduced volume and weight made national expansion of Tree Top's market possible. Today, "writes Stratton in his preface, "in fulfillment of Charbonneau's vision, Tree Top's seven plants produce apple juice and cider as the backbone of its retail market in 30 states, with the core outlets in the West and Southwest, and also produce concentrated juice and concentrate, which are fresh apple slices, blends with other juices, and apple sauces.

The Tree Top cooperative currently has approximately 1,100 members, down from its historical numbers. But acreage has increased significantly. "This profile of fewer growers, but larger

Our Story

The greatest athlete in Washington State history. A century of Greek life at WSU. Remembering Munro's last visit.

wsm.wsu.edu/stories/
Round-Up and recovery

By Hannah Sudder

Locals often see Mike and Jill Thorne on the two-lane highway between their ranch outside Pendleton and the Oregon city on weekends. At the 100th anniversary of the Pendleton Round-Up in September, the couple is busy preparing both the rodeo site and their community for the big day.

Since the first bronze bucked, the event has been a showcase for the best in rodeo and spectacles from across the Pacific Northwest. Today, it’s one of the 10 biggest rodeos in the country. It’s rooted in Oregon, but it’s the “Bartholomew County” of Washington, including two of its key volunteers, Mike ‘62 and Jill ‘64.

For them it started at Washington State University, where Mike, 32, a farm kid from Pendleton and member of 17 Round-Up, met Jill, a Beta Phi from Olympia, on a blind date. They married in 1963.

Certainly Jill brought a level of excitement and spark to life for her family, “says Mike. If it wasn’t for her, he may never have decided to run for public office. His first effort, in 1973, put him in the Oregon State Legislature as a senator representing District 29 while he was in his early 30s. “We weren’t supposed to win,” he says. But once they got over the initial shock, they kept up.

The Thornes’ fundraising savvy has paid off, by $5 million. All the while, the couple raised two children.

Thirty years later, their son Troy joined the Round-Up. “Our past is the key to our future,” says Mike. “Our past is the key to our future.”

When the picture of the Pendleton Round-Up presidents including Mike’s father. On another wall, among the pictures of the past rodeo queens, is their daughter Kay (Thorne) Collins, who today is director of the Oregon Department of Agriculture.

Taking up much of the round-up’s long wall is a giant colored photograph of the Round-Up grounds in the 1940s. “I ask Mike if he might be in the picture. “Nah,” he says. “I am, I’m because I was competed and I’m down there somewhere being drug around.” Mike greets serious and starts considering the landscape. He points to the saw mill on the upper right, and says, “That’s the Walmart now.” Then he points to the food processing plant. “That’s a shopping center.”

“Pendleton used to be the business center for northeastern Oregon,” says Mike. “But the agriculture, resource-based economy has gone away.”

So what’s left? A historic downtown, the woolen mills, a strong connection to the Umatilla by Hanneore Suddermann

Washington, and a Round-Up that really hadn’t changed much since its creation in 1910. “Naw,” he says. “If I am, it’s because by Hanneore Suddermann

of the 17 Round-Up board and seeing the 100th anniversary of the Round-Up as a chance to push the town. They’re in the thick of renovating the stadium, leading fundraising efforts, and bringing in outside grants for revitalizing the grounds.

There have been three, including continuing the long-time Round-Up leaders to donate $5,000 per family to buy a brick pillar on the highway between their ranch outside Pendleton and the Osage.

The future isn’t complete, however, with horse-shoe detailing, and seating for nearly 10,000, including 900 wheelchair-accessible spots.

With all the changes, many components have remained—there’s no advertising to clog up the view, it’s still a rich four-day event complete with cowboys and Indians, and it’s still put together with the volunteer efforts of local families like the Thornes.

The Thornes are back this year, September 11 through September 18. The meat of the matter By Nikki King ’10

Dan Snyder can remember when local grocery stores would only buy one case of Cougar Brand Smokies at a time. Now, it unusual for them to buy fewer than three or four. And when they run out, the Washington State University Meat Lab manager’s phone starts ringing.

The meats lab is tucked into the parking lot behind the Lewis Alumni Center. It is primarily a teaching facility, used for animal sciences classes and agriculture industry professors to learn how to evaluate live animals and grade process animal carcasses. It’s also home to one of the most popular meat products on the Palouse.

The German-style smoked sausages were invented 5,000 years ago to solve a dilemma of what to do with the extra beef and pork trimmings. They have developed a small, but loyal following. At Ferdinand’s Ice Cream Shoppe the Smokies have been offered alongside Cougar Gold Cheese for nearly 20 years. They will faster, says Snyder, than the beef and pork, he wouldn’t divulge the ingredients, which were determined long ago by former meats lab employees including manager Duncan B. Dunn ’80. Snyder would only say they are smoked with hickory or liquid smoke and that his sausage making philosophy is simple: Use good meat, ensure a good product, and sales will stay up.

The meat is local, primarily from the WSU Swine Center and beef from the Cattle Feeding Lab. The process starts in the USDA-inspected “harvest room.” While the pork is processed sooner, the beef carcasses are aged in the cooler for up to 14 days, which tenderizes the meat as the muscle fibers break down. “As far as aging, cutting, and wrapping, it’s all done the same way today, that it was done 50 years ago,” Snyder says.

But there have been changes. Because of strict “zero-tolerance” USDA guidelines, the lab has more stringent rules for cleaning and sanitizing, Snyder says. Everything in the room gets washed and thrown and cleaned and scrubbed and raised” before it’s ready for another day. Across the hall in the processing room, which doubles as a classroom, the carcasses are cut and wrapped, and the sausage is made. In an adjacent cooler, many dreams of plum Smoky sausages are waiting, awaiting their deliciousness.

The Smokies are only one of the lab’s many endeavors, Snyder says. Besides teaching and offering extension courses, the lab sells lamb, whole and half sides of beef and pork, sausages, and breakfast-style sausage, bacon, and hams to people who call or stop by. In our quest for details about the Smokies, we tracked down a few former students, Mathew Dedbach ’36, ’36 worked at the meat lab for about three years. Now a teacher at Tonasket High School, he offers a meats unit where students make their own sausage. He has sampled a lot of “Smokies in his day. They are the Bellamy Roxy of sausages, he says. ‘Tis the quality ingredients that go into that product that makes it heads and tails above everything.’” He didn’t have many details to offer, though.

Good Cool ’37, ‘32 MS worked at the lab from 1985 to 1988. He monitored the lab’s output, and enjoyed a day trip 40 minutes south to get a taste of cowboys.

They married in 1963.

Meanwhile Jill, who had an interest in community work, started considering the connection will serve the city beyond the next rodeo. “All spectrums, all ages, all demographics. That’s a shopping center. We’re not supposed to win,” he says. But once they got over the initial shock, they kept up. The Thornes’ fundraising savvy has paid off, by $5 million. All the while, the couple raised two children.

For them it started at Washington State University, where Mike, 32, a farm kid from Pendleton and member of 17 Round-Up, met Jill, a Beta Phi from Olympia, on a blind date. They married in 1963.

Certainly Jill brought a level of excitement and spark to life for her family, “says Mike. If it wasn’t for her, he may never have decided to run for public office. His first effort, in 1973, put him in the Oregon State Legislature as a senator representing District 29 while he was in his early 30s. “We weren’t supposed to win,” he says. But once they got over the initial shock, they kept up.

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The landscape around the Puget Sound has been in flux since the pioneers felled the forests to open up the bottomlands for agriculture. These loamy soils drew some of the earliest farmers, who were delighted to find the region suited a wide variety of crops.

The South Park neighborhood in South Seattle sprang up on fertile, level farmland adjacent to the Duwamish River. According to historian David Wilma, before the settlers arrived, the spot was occupied by Indians, who grew potatoes, fish, and harvested berries there.

In the 1900s this neighborhood became home to “Contadini,” Italian immigrants who had been born into farming in their native country. This is where Carmine Marra and his wife Maria bought land in 1920 and set up a truck farm that for years to come would be a center for the community. Besides producing a bounty of food to sell in Seattle at Pike Place Market, the farm was a place to meet at the end of the day or play bocce on weekends.

Today the neighborhood is still home to immigrant communities, but much has changed. It sits just behind one of the most industrial and toxic areas of the city. The Marra Farm, which survived as a community garden, is the only agricultural land left. It seemed inevitable. Development had started before the Contadini arrived. The river was redirected and channelized for improved shipping access. In the 1920s Boeing’s air plant sprung up on the east side of the river, followed by recycling plants, concrete plants, rendering operations, and a foundry.

Besides the pressure of Boeing’s expansions and increased industrial use of the neighborhood, by the 1940s the local farmers were finding it hard to compete with the large-scale California produce farmers. All the while, “the farmlands themselves were becoming too valuable for agricultural use,” wrote the Marras’ nephew Fred Marra.

While the story of the lower Duwamish is extreme, a similar tale can be told for many other fertile areas of the Sound.

Kent, once home to hops farms, dairies, and acres of produce, was known in the 1920s as the Lettuce Capital of the World. The area started to change in the 1960s after the Howard Hanson Dam on the Green River stopped the valley from regularly flooding. The Boeing Aerospace Center was followed by other industry and technology businesses. Today the valley is clogged with warehouses, trucks, and storage units. It is also home to a variety of corporate headquarters including Oberto Sausage Company and Recreational Equipment Incorporated (REI).

To the east, along the Snoqualmie River, developers are pushing the question of what is a farm by packing the rolling hills with mini-estates complete with their own horse paddocks. Larry Pickering ’68, who grew up among the 40-some dairy farms near Fall City, watches with dismay as these multi-million-dollar homes cover the land around him. “We took it so for granted,” he says. “We didn’t know what we had.” Back in the 1960s, Larry Pickering enrolled at WSU with plans to study animal science and prepare to run the family dairy. But dairy farming was changing and the farms were growing to hold hundreds of cows. “I could see that I would have to become a manager rather than a farmer,” he says. So he changed his course and became a veterinarian. “I figured I could switch to horses and have the life I wanted.” He watched in the 1980s as King County spent $50 million to preserve agricultural land, and then watched that farmland dissolve into one-acre horse estates. “Thirty years ago, we assumed if you couldn’t put development on land, you would have to farm it,” he says. But that
proved wrong. “Now they put a $5 million home on it and some horses and it’s lost to agriculture.”

North of Seattle, in Everett, a similar story plays out along the Snohomish River. And south along the Puget Tolle, farms have given way to housing developments, warehouses, and shopping malls. In twenty years, according to a USDA Natural Resources Inventory report, the state has lost an average of 23,720 acres of farmland per year (an amount about the size of Lake Washington). But in this river of expansion there’s a countercurrent, a push of agriculture back into the urban and suburban areas around the Sound. Farms are opening up on land where industry has stalled. In some areas, instead of selling off to development, old 50- to 100-acre farms are carved up into 10-acre operations that deal directly with consumers.

Farms are spending back onto lands that have been reason for industry. No one’s building warehouses right now, says WSU extension agent Cha. “There means making it easier to garden and grow food, to ensure that good food is available in all neighborhoods, and to find innovative ways to encourage local and regional food production.”

It’s not just happening through farm stands and farmers markets. Grocery stores are offering classes on how to find food produced closer to home. And some, like PCC Natural Markets, have established trusts to preserve ag land and support new farmers.

In her 1970 book The Economy of Cities, author and urban theorist Jane Jacobs hypothesizes that cities came first, and rural economies, including agriculture, were built upon city economies. She also points out that the most urbanized countries “are precisely those that produce food most abundantly.” Growing healthy cities, she argues, carry rural and agricultural productivity in their wake.

Japan, after World War II, reinvented its agriculture, notes Jacobs. It recognized activism. She has served as president of Tilth Producers of Washington and participates in local and state farm and legislative advisory committees.

That movement from the ’70s didn’t disappear, says Schwartz. It matured. The original issues are still in play, but they have broadened to include countering global climate change, protecting farmland from development, securing the food supply, and instilling a sense of community.

“There certainly is enough of a public upswelling,” she says. Add to it that the downdraft in the economy is stalling development and that there’s a greater public awareness of the need to preserve farmland. Then factor in a greater desire for fresh, local food. It has all worked together to put farming back near and into cities, she says. “It’s a little bit of a perfect storm.”

THE NEW FARMERS

A few miles uphill from the Matra Farm into West Seattle, right in the middle of a brand-new neighborhood, is the High Point Market Garden—where small-scale farmers can raise produce on public land that they sell at farmers markets and through Community Supported Agriculture (CSA) subscriptions.

High Point is born-again neighborhood. In 2003, working-class and immigrant families were moved out of the 60-year-old community and all the roads, homes, and utilities were removed. They were replaced with a mix of 1,600 low-income rentals, single family homes, condominiums, and town homes. And small farms and gardens.

The mixed-income community was completed this year. It houses about 100 Hmong farmers who are now farming in Washington, agriculture was a means of making a living in their new country. Some of what they did went against their culture and traditions, says Cha. Growing flowers for example—in Seattle, the Hmong farmers are famous for providing gorgeous, affordable bouquets at places like Pike Place Market. “In Laos flowers are considered a status symbol,” says Cha.

The new farmers are using intensive cropping to grow enough produce to fulfill orders of weekly produce for 30 households.

Cha’s small farms are bringing health and energy to our cities, says Cha. “Vegetables are much more labor intensive,” he says. “They’re harder to pick, you have to be more aggressive with weeds and insects, and you need water like water to irrigate and wash them and to have storage structures, probably cold storage, on site. Flowers, until you get to the market and have to start arranging them, are much easier, he says.
Agriculture returns

Cha’s understanding of what it means to be a new immigrant, his language skills, and his knowledge of farming gives him a perspective for helping the newest refugees figure out farming in the Puget Sound region. One day this spring he drives down to Kent where a dozen East African farmers are waiting. It’s Cha’s day to teach them how to assemble and use a small seedling planting machine. Back at the refugee camp in Somalia they planted everything by hand—and grew food to supplement their rations. Here they’re trying to feed themselves as well as sell produce through small grocery stores.

The refugees’ farm is a 10-acre lot at the base of a hill. At one end is a ramshackle blue shed. At the other, a home and yard littered with cars and appliances. Two groups of refugees are using these acres—a group from Somalia and a group from Burundi. The men gather around as Cha pulls the seeder out of a medium-sized cardboard box. Celestine Sibomana, the farm manager for the project, follows Cha’s instructions and uses the tool to sow a row of beets. “Part of the challenge for them,” says Cha, “is just learning how to farm in the Pacific Northwest.”

BACK TO THE FARM

On the day the African farmers in Kent are trying out their seeder, 30 miles north along the Snoqualmie River Siri Erickson-Brown and Jason Salvo spend their morning planting lettuces, tomatoes, and other seedlings. Salvo and Erickson-Brown are both city kids, graduates of Garfield High School who seemed destined for urban living. After college, Erickson-Brown went to graduate school in public affairs and Salvo headed to law school. A year later they found a landowner willing to farm with them and broke ground on his property along the Snoqualmie River. At the same time, points out WSU extension agent Andrew Corbin, they live in one of Seattle’s oldest and most urban neighborhoods, Capitol Hill, and drive a reverse commute out to the farm near Carnation.

“We’re Local Roots in all its meanings,” says Salvo, explaining that when they started selling their produce, they reached out to friends and family in the city. They sold subscriptions for weekly delivery of local food systems. And they keep an online blog on the challenges (slug and dove damage) and the pleasures (selling out at the market) of farming.

More and more 10- to 30-acre farms with hundreds of varieties of vegetables and specialty livestock are moving in, says Steve Evans, King County’s farm specialist. Over the years he has seen established farms disappear for a variety of reasons—including encroaching development and increased environmental regulations. But as things like dairies die off, land is now available for smaller farms with high-value crops.

Despite the trend to more small farms, the future of agriculture in King County is uncertain, notes the county’s 2009 Farms Report. While the conversion of farmland has been slowed, agriculture is still threatened...
by population growth and upslope development that increases the risk of floods in the farmlands. Rezoning and real estate speculation drive up land prices. Still, enough land remains open in King County to grow sufficient produce for its entire population, says Evans.

The push to bring agriculture into the cities is quite organized. Schools are teaching children to grow their own food and nonprofits like Seattle Tilth, Lettuce Link, and Sy Friut, a group that harvests fruit from neglected trees throughout the city, are advocating the local production of food. The nonprofit Cascade Harvest Coalition is a collective of farmers, chefs, teachers, land managers, and others who grouped together in 1999 to “re-localize” the food system in Washington.

The movement is pushing south into Pierce County and Tacoma, “which is a good indicator of changes beyond the primary tier consumer,” says WSU extension agent Chris Benedict. In Seattle people will pay more and drive farther to get fresh, local food. In Tacoma, where the median income is lower, “it has to be much more economically competitive,” he says.

Terry and Dick ‘65 Carkner have managed to maintain their organic berry and produce farm in Tacoma for more than 25 years while the farmland around them has been swallowed into housing developments, warehouses, and a truck driving school. They’ve watched demand increase for their food and have expanded their business by selling CSA shares for their crops.

They’re being joined by new urban farmers, as the City of Tacoma is converting some city parcels into community gardens with the goal of someday being the city with the most community gardens per capita.

This growth of new farms and the revival of old ones is a pleasing sight to Larry Pickering, who serves on the King County Agricultural Advisory Committee. It’s not just a phase, he says. When diesel reaches $3 a gallon and produce imported from California and beyond becomes too expensive, everything is going to change, he says.

“Local producers close a lot of loops,” says Pickering. They give our region independence from the vagaries of the world market, he adds: “This is going to take off like crazy.”

A SINGLE GALLON contains more than 30,000 calories. You wouldn’t want to drink it, but in straight-up energy terms, that’s enough to power a human for about two weeks.

Gasoline is convenient, portable, and for the most part, cheap. For the purposes of this story, I used it to log more than 1,000 miles around Washington State and make appointments, easily, and always on time. Tank low? More than 2,000 filling stations were out there for me to fill her up and pay with a piece of plastic.

“The liquid fuel distribution system in our country is a work of art in many ways,” says Peter Moulton, senior energy policy specialist for the Washington State Department of Commerce.

More impressive still is the tortured narrative to the tank: Over millions of years, buried microbes are cooked and compressed to form long chains of carbon and hydrogen. Enter “Colonel” Edwin Drake’s well in Titusville, Pennsylvania, oil boom in Texas and Saudi Arabia, plastics, modern agriculture, a massive infrastructure of wells, refineries, pipelines, tankers, filling stations, highways, and yes, the automobile, which now runs through more than 200 billion gallons of gas a year.

Just add new car smell, clean windshield, and turn CD.

But to briefly rain on the parade, that gasoline also contains more than a dozen hazardous chemicals, including some, to use the parlance of our times, known to the State of California to cause cancer, its adjusted-inflation price, while blissfully unchanged for most of a century, is now startlingly unstable. Fossil fuel production is polluting our oceans. Its consumption is warming our climate. Our dependence on foreign oil drains more than $5 billion a week from our economy. If only we could simply grow our own fuel.
It’s starting to look like we can. Out on the windy reaches of the Columbia Plateau, researchers are looking to a day when the blandly yellow flowers of a tiny canadina olive might transform millions of acres of dry, dusty, often fallow cropland. In a retired chicken coop on the WSU Pullman’s old Carver Farm, researchers are cooking wood for oil and setting mannure for a possible use for the slash from logging, the leftovers from food processing, and dairy manure.

All told, scores of WSU researchers are setting and burning their way to a new energy future. In their world, it is biological, if it contains a carbon atom, there is a way to draw some energy out of it. Now we just have to find a way to do that in a practical, economic way that approaches the practical, economic grace of gasoline, which, by the way, has had a 100-year head start.

All of these fuel options have trade-offs,” says Chad Kruger, interim director of WSU’s Center for Sustaining Agriculture and Natural Resources, “and we can’t predict what they all are. Nothing will be as ‘simple’ or ‘competitive’ as petroleum.”

**DIGEST THIS**

Craig Frear is standing by a 10-gallon steel tank in an abandoned chicken coop on WSU’s old Carver Farm. The tank is an experimental anaerobic digester capable of converting cow manure into a gas rich in methane, the main element of natural gas. It looks a bit like a modern wood stove, but in some ways, Frear sees it as a large, metal cow stomach.

“Lots of papers say look to nature to get your best engineering,” says Frear. “A cow’s rumen is perhaps the most perfectly designed digester on the earth. From an engineering perspective, your challenge is to mimic it and keep costs down.”

Frear speaks with the clarity and directness of a school teacher. He was one for 12 years before undertaking a PhD, in part as a promise to his dad. He ended up receiving his WSU doctorate in engineering science last year, just six months before his father’s passing. Along the way, he’s analyzed more than 40 different materials that could be sources of bioenergy, focusing in particular on bringing cow-gut technology to a practical, economic way that approaches the practical, economic grace of gasoline, which, by the way, has had a 100-year head start.

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**OIL IN THOSE HILLS**

For most of the past century, farmers in the dryer, windier parts of eastern Washington have turned to agronomists like Bill Schillinger to tell them A, how to keep their soil from blowing away and B, what is best to grow.

Faculty and staff of WSU’s Lind Dryland Research Station have in the process helped reduce erosion from hundreds of tons per acre while WSU breeders have developed several varieties of wheat suited to the region.
### Biofuels Production

Walla Walla University researchers are seeking to develop camelina, a short-season oilseed, into a competitive biofuel supply. Camelina, also called biochar, can be grown on marginal lands and developed into a variety of useful products. Researchers at WSU have identified several uses for camelina, including jet fuel, biodiesel, gasoline, and diesel. The goal is to develop a product that can be used in transportation and energy production.

#### Conversion

- Camelina is first converted into oil by a process known as “crushing” or “pre-extraction.” The oil is then refined to produce biodiesel.
- The remaining solid mass is used to produce biochar, a carbon-rich material that can be used as a soil amendment.
- The carbon dioxide produced during the refining process is sequestered in the biochar, making it a more sustainable option.

#### Application

- Camelina oil can be used as a drop-in fuel for jet engines.
- Biochar can be used as a soil amendment to improve soil quality and fertility.
- Carbon dioxide from the refining process can be sequestered in the biochar, reducing greenhouse gas emissions.

#### Benefits

- Camelina is a short-season crop that can be grown on marginal lands.
- It is a versatile crop that can be used to produce a variety of useful products.
- It has the potential to reduce greenhouse gas emissions and improve soil quality.

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#### Biomass

Biomass is any organic material from living or dead plants or animals. It can be used as a fuel source or as a raw material for the production of other products. Examples include wood, plant material, and animal waste.

#### Photosynthesis

Photosynthesis is the process by which plants convert light energy into chemical energy. It is the primary source of energy for all living things on Earth.

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**Read more about other areas of clean technology research at cleantech.wsu.edu.**

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**something's burning**

Manuel Garcia-Perez reaches into a refrigerator, pulls out a one-liter bottle of brown liquid, and offers a whiff. It smells oddly familiar—like gasoline. Why would a university researcher be testing a product that looks and smells like gasoline? The answer is simple: because gasoline is the primary fuel for transportation, and developing a safer, more sustainable alternative is crucial.

But would-be camelina growers might be wary of canola’s own shakedown phase. Four years ago, biodiesel based on canola and other sources was selling for less than conventional diesel, a trend that lasted about a year and a half. “It’s a bubble,” says Garcia-Perez.

Indeed, the very process Garcia-Perez uses to make this liquid is the same used by the Kingsford charcoal company, only faster. So where is this new fuel oil going? “We look at that and view that as an extremely aggressive, optimistic plan,” says Starr. “We will just to have to see if they can do it. Farmers are very much seen it as a toothless guideline more than a rule. But it’s been given momentum by the recent interest in biofuels.”

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**Converting Biomass to Biofuels**

- **Biomass**
  - Includes agricultural and forestry residues, crop and industrial wastes, and energy crops.
- **Conversion**
  - Physical, chemical, and biological processes to convert biomass to energy.
- **Application**
  - Biofuels: transportation fuels, electricity, heat, and biochemicals.
- **Benefits**
  - Reduced greenhouse gas emissions, increased energy security, and economic development.

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**Source:** Craig Fear
Cultivating new energy

Fall 2010

It’s late one afternoon and Chad Kruger has spent about an hour extolling the virtues of manure digestion and camellina-based biofuel. He has a nearly four-hour drive to Wenatchee ahead of him, so by way of wrapping up I ask what else we might talk about.

“I’m,” he says, with no further prompting, “algal is the holy grail.”

Off the top of his head, he quotes the following figures: camellina yields 30 to 40 gallons of fuel per acre, corn produces about 250 gallons per acre. But algae can produce orders of magnitude more—5,000, even 15,000 gallons per acre.

“You can see very quickly,” Kruger says, “if you’re looking for massive amounts of fuel, algae is it.”

I run this notion by Shubin Chen, a professor in the Department of Biological Systems Engineering. Last year, he and a variety of partners around the state received a $2 million federal appropriation to develop algae and find a way to convert them into fuel and other products.

“Realistically,” he says, “it’s more like 2,000 gallons. We can do 2,000 now. We can design a system to do 2,000, not in a pond, but in a greenhouse.”

More to the point, he says, pulling up a map of the United States, soy-based biofuel would use almost all the nation’s cropland to replace just half its annual gasoline consumption, says Jonathan Yoder, an associate professor of economics and leader of a major study of the state’s biofuels economy and policy. But press him on the detail, and Yoder says, “I’m going to hell and back here.”

“Um,” he says, with no further prompting, “algal is the holy grail.”

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“You can see very quickly,” Kruger says, “if you’re looking for massive amounts of fuel, algae is it.”

I run this notion by Shubin Chen, a professor in the Department of Biological Systems Engineering. Last year, he and a variety of partners around the state received a $2 million federal appropriation to develop algae and find a way to convert them into fuel and other products.

“Realistically,” he says, “it’s more like 2,000 gallons. We can do 2,000 now. We can design a system to do 2,000, not in a pond, but in a greenhouse.”

More to the point, he says, pulling up a map of the United States, soy-based biofuel would use almost all the nation’s cropland to replace just half its annual gasoline consumption, says Jonathan Yoder, an associate professor of economics and leader of a major study of the state’s biofuels economy and policy. But press him on the detail, and Yoder says, “I’m going to hell and back here.”

“It’s the type of offbeat, cutting-edge discovery that attracts Ahring, a microbiologist and one of the first two researchers hired under the program aims to develop “high risk, high payoff” technologies that reduce our dependence on foreign oil, improve energy efficiency, and cut down on emissions. Meanwhile, Ahaming and Ahamed collect American, German, and Middle East.

In an as-yet unpublished paper, the researchers document measured improvement: “We can actually engineer the strains to do what we want,” says Ahaming.

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MID-AFTERNOON IN LATE APRIL, I head out of Wenatchee on Highway 2. I turn off at Peshastin and cross the Wenatchee River. Much of the apple bloom lower down is already past. But here, upriver, the pears are glorious. Packed into the narrow valley and up every arable draw and cranny are pear trees, every one of them in full bloom, backed by the crags of the Cascades front.

Later that afternoon, sated by the beauty of the pear bloom, I meet Mike Robinson ’80 in a pub in the Fifth Avenue Mall in Wenatchee. He tells me what it’s like in the pear and apple orchard right now from the economic and management perspective, reflecting, at least to an extent, the harmony of the aesthetic spectacle.

“Here’s an industry that’s losing its old standby number one product for its number one pest,” he says, initially suggesting a very un-idyllic scenario.

“You don’t read about it. You don’t hear about it. Nobody’s upset. Nobody’s even concerned.”

He seems almost blissful as he leans back and takes a sip of beer. “That’s perfect.”

Robinson is an apple grower and also an orchard manager for Double Diamond Fruit in Quincy. He’s a key player in an industry that expects to produce 100 million boxes of apples this year. Because of a competitive, and picky, world market, every one of those apples has to be perfect. And the greatest threat to perfection is the codling moth.

The larva of the codling moth is your basic worm in the apple. The codling moth is prolific, persistent, and omnipresent. Anywhere there’s an apple tree in North America, you’re going to find codling moths. Despite all that, for the last 40 years, fighting the codling moth was pretty straightforward. Just spray them at appropriate times with azinphosmethyl, trade name Guthion. Azinphosmethyl is a broad-spectrum organophosphate pesticide that is very effective at killing codling moth and other insects. Unfortunately, it isn’t partial only to insects. Like other organophosphates, azinphosmethyl’s roots are in neurotoxin research during World War II. In other words, if misused, it can be toxic to anything with a nervous system.

Still, for decades, the fruit industry relied on it, applying it, for the most part, judiciously, until Congress, reflecting a changing mood in the country, cast a pall over the future of organophosphate control.

In 1996, both houses of Congress unanimously passed the Food Quality Protection Act. The FQPA required the Environmental Protection Agency to re-register, or re-evaluate, all pesticides within 10 years. The act also shifted the EPA’s approach from a risk-benefit consideration of those pesticides to one based entirely on a measure of risk. The EPA initially focused its attention on the organophosphates, which it considered the highest-risk class of pesticide. The result has been a gradual phasing out of the organophosphates. Azinphosmethyl will be history by 2012.

After the passage of the FQPA, growers were understandably afraid they’d lose all their tools, that no new pesticides would be registered, says Jay Brunner ’75 PhD.

Brunner is director of WSU’s Tree Fruit Research Station in Wenatchee and, even more pertinent to Mike Robinson’s good mood, the director of the Pest Management Transition Project. The PMTP is a primarily educational endeavor that has enabled the Washington tree fruit industry to find its way into a new, very complicated, and initially unsettling era of orchard management.
Many of the changes in post management brought on by the FQPA were difficult. Some pesticides were restricted. Lorsban, for example, which was a standby summer spray for San Jose scale, leafrollers, and codling moth, was suddenly restricted to use on pome fruits, so there would be no residue on fruit. The re-entry period of Guthion, the weapon of choice against the codling moth, was boosted from 3 days to 14 days. Re-entry is the period orchardists must wait before re-entering an orchard after spraying.

But the positive developments of the FQPA, if not obvious at first, eventually far surpassed the oppressive restrictions.

“Lorsban’s replacement, how Brunner, ‘lots of new pesticides were registered that targeted key pests that organophosphates were targeting, but at low risk to birds and wildlife.’”

**ROBINSON AND HIS FELLOW APPLE-GROWERS** likely would not be so calm about the looming loss of their codling moth weapon were it not for a couple of developments over the decades: integrated pest management and mating disruption.

Mating disruption has thus become a major part of the strategy called integrated pest management, a combination of chemical, behavioral, and biological controls.

**THE IDEA OF IPM** goes back to soon after World War II. As soon as the pesticides that grew out of nerve gas research during the war were released, scientists started worrying about the development of pesticide resistance in the pests. Although scientists in California had used an early IPM approach in alfalfa, it really hadn’t progressed much beyond theory.

When entomologist Stan Hoyt joined the USDA research station in 1957, he turned his attention to two of the major apple pests at the time, the seemingly eternal codling moth and McDaniel spider mite. The spider mite, though, was not yet a serious problem.

“ar a demand new miticide called Bithionol,” says Hoyt. “So things didn’t look too bad.”

But by the following year, some McDaniel populations had already developed resistance.

“Well, we still had another one, Aramite—”

But then, Aramite was found to be a carcinogen at high rates and suddenly you have spider mites everywhere.”

For example, he says, “You don’t think of spider mite management as something that helps other pests. But mating disruption can help other pests.”

**Essentially, His Hoyt’S Ideas Are What Have Driven How Management Occurs for the Last 50 Years,” says Vince Jones, a research entomologist currently at the Tree Fruit Research Station.

**Opposite and below** The new other pesticides have reduced to entry time for workers from as much as 14 days to five hours.

While doing some of his codling moth studies, Hoyt noticed that one treatment, involving a lower dose of spray, stood out. There was no mite problem. Hoyt found some predators. Not many. But not many spider mites either.

The next year he tried the treatment on a larger area. It wasn’t very effective against codling moth, so he switched to Guthion. But at the standard rates, the mites increased again. So they lowered the application rate to a level that controlled codling moth, but allowed predatory mites. Tylodioides acardinus, in the orchard to survive. It worked. The McDaniel populations dropped to tolerable levels. But selling the approach to growers was another story.

“We were people who called it Hoyt’s Foxy,” he says. Even though Hoyt knew the way to increase control of spider mites was to decrease the amount of pesticide in a level that spared the predators, it was hard concept for an anxious grower to swallow. But Hoyt persisted.

Then in 1965, the area was hit with severe frosts. Growers, faced with small crops, suddenly were eager to save money in any way possible, particularly pesticide applications, and turned over large acreages to Hoyt’s experiment.

“When we started applying lower rates of Guthion, our actual costs for pesticide for a box of fruit was like 20 cents,” says Hoyt. Growers who continued to spray conventional miticide treatments were spending five or six times as much.

By 1966, growers were using Hoyt’s system on 3,000 acres of apples.

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**By 1967, the program had grown to 40,000 acres. Eventually, says Brunner, growers adopting Hoyt’s program were able to eliminate sprays for spider mites. He estimates that since its implementation, Washington growers have saved over $120 million in pesticide cost alone.**

“With the new material, it was not obvious,” says Jones. “They’re not always just increased mortality.”

“Some are more acutely toxic than we thought, just through contact,” says Brunner.

“Some of the new pesticides are steroidal,” adds Jones. They alter sex ratios, make them all males, reduce fecundity, reduce longevity. “All of these factors really affect population dynamics.”

Also, says Brunner, “instead of having one product for codling moth, now we have many. All are active in slightly different ways. Some of these products control just codling moth. Others control codling moth and Pest A, others codling moth and Pest B, depending...”

**But at the standard rates, the mites increased again. So they lowered the application rate to a level that controlled codling moth, but allowed predatory mites. Tylodioides acardinus, in the orchard to survive. It worked. The McDaniel populations dropped to tolerable levels. But selling the approach to growers was another story.**
on when they’re used. Weaving that all together in a program is what’s complex.”

Add to an already complex situation the problem of resistance. “You need to mix them around. With the older chemicals, sprays would be applied and then work-horse sprays would be applied and then.”

Ten years ago people didn’t worry about resistance,” continues Brunner. “Now we go to meetings and we say use this product or use this product, and growers ask, well how does this fit in resistance management?”

The members of the PITH have been communicating not only with growers and managers, but with farm workers also. One of the main messages carried by team members such as postdoctoral Nadine Lehrer to this group is that the new products they’re working with really are safe.

And they’re highly trained,” he says. “They’re taking our information and they integrate it into the needs of every grower.”

“The DAS has changed my life,” says private pest management consultant Nick Stephens. He now joins most of the region’s growers and consultants in logging into the DAS every morning. It does not do their work for them, but rather helps them decide which among the many choices to apply when for cooling, for example. What spider mite predators are vulnerable to spray right now? Have there been enough degree-days of heat to make opening for fireblight necessary?”

As powerful as the DAS is, Brunner also stresses that there is no cookbook recipe for managing an orchard.

“All site is different. The permutations are huge.”

The Washington fruit industry is an enormously complex web of weather, diseases, pests, frost, irrigation and other infrastructure.

“Anyway,” says Stephens, “this time of year it’s...”

“ONE HUNDRED MILLION BOXES!” is the first topic of conversation at breakfast the next morning. I’ve met Harold Schell and Nick Stephens at Smith’s on Wenatchee Avenue, the main drag. A hard wind is still driving out of the Cascades, and it’s cold enough for a warm jacket. But Schell and Stephens are upbeat.

Stephens, a private consultant, you met earlier. Schell ‘77 is the lead horticulture fieldman for Chelan Fruit, one of the main packing warehouses in the region.

The hundred million boxes is the size of this year’s projected apple crop. In spite of what might seem a potential oversupply, prices are good and holding firm, says Schell.

“Yeah, everyone’s feeling good. But you can feel the intensity of what these guys do. Washington is the largest apple growing state in the country. No one comes close. And Stephens and Schell aims to keep it that way. Not only is the pressure of producing perfect fruit intense, so of course is the economic pressure.

Later that morning I drive up to Wenatchee Heights. The apples and cherries at that elevation are still in full bloom. The roads between orchards go on forever. Orchard upon orchard spread down toward the valley, a panaromic landscape of enormous scale, of fruit, of beauty, and of livelihood.

Earlier, Brunner had given me a quick tour of the investment and risk landscape.

WSU recently planted a new research orchard south of Wenatchee at a density of 3.421 trees per acre. “And that’s not highest density,” he says. Some orchards on dwarfing rootstocks and trellis systems push 2,000 trees per acre. Figure $78 a tree. Then there’s irrigation and other infrastructure.

Brummer estimates there are between 200 and 250 consultants working in the industry. A few are private. Some work with the warehouses. Some work with chemical distribution companies.

“They’re highly trained,” he says. “They’re taking our information and they integrate it into the needs of every grower.”

These guys are investing, in the first three years, anywhere from $25-27,000 an acre with no return. They have to have a full-bearing crop by year six or seven to pay back investment. The capital intensity is huge compared to wheat or almost any other agricultural crop.

“Now it’s four hours,” says Brunner.

“It’s the kinder, gentler orchard,” says Jay Brunner and postdoctoral researcher Nadine Lehrer have led grower education through the Pest Management Transition Project.

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Duke praises the Forest of Arden, but he does so in language that draws us “nature writing” in any meaningful sense, and neither do hundreds of waterfall. And even if I had, I don’t suppose I would have been able to Marlowe’s famous lyric, “The Passionate Shepherd to His Love”:

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In short, this is a moralized forest, a setting where the Duke finds

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One version of pastoral

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I’ve noticed lately that people rely on the term “pastoral” more often than they used to when they talk about nature writing. The long pastoral tradition in European literature, for instance, is now commonly seen as a garden plot of witness to the natural world that burst into bloom with the rage of John Clare and the meditative prose of Thomas and Muir, Mary Austin and Aldo Leopold, Wendell Berry and the rest. This is an attractive notion, and perhaps it’s true. But to me it looks like wishful thinking—a quixotic misreading of early poetry in the interests of conferring a pedigree on literary habits that never entered in the first place.

In other words, we’ve always had nature writing, just as we’ve always had writing about love, or war, or death. Gorgeous passages in Homer’s Odyssey describe the Mediterranean Sea at dawn, and George Herbert’s poem “The Flower” offers an astonishing evocation of the life-cycle of a common possum, even though its primary purpose is to encourage Christian devotion. Nature writing is often accidental, secondary, a by-product of other more pressing concerns. Yet it’s no less valuable for that. And by the same token, considerations of the natural world embedded in pastoral are frequently stilted and conventional, displaying little in the way of authentic observation. Take the opening stanzas of Christopher Marlowe’s famous lyric, “The Passionate Shepherd to His Love”:

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I am led to abase our presumption and to lay aside that imaginary

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Written in France in the 1570s, these words articulate an outlook unheard of in its time—an astoundingly forward-looking perspective that conveys an entire universe of personal romantic interpretation: “Nature, in its time

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Montaigne lived in the French countryside, very much in an agrarian setting, and he would have understood the realities of rural life more thoroughly than most authors of his day. Perhaps this explains why he never participated in the literary tradition of pastoral: It must have seemed

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Good writers have always known this. Because the spectrum of possible attitudes induced by serious nature writing is relatively narrow—and because removing one can quickly disintegrate into pseudo-spirituality and mandarin enthusiasm—writers like Shakespeare and Montaigne keep their passages of natural description within sharp limits, usually interlacing them with other themes or truths.

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I don’t mean to say that the book would be primarily concerned with

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Indeed, this is precisely how Renaissance literary theorists understood

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For through his mane and tail the high wind sings,

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Both these writers, of course, lived in a world without newspapers, television, film, cell phones, iPods, or the Internet—a world where poetry still far more cultural work than it does today. It’s hardly surprising that they saw pastoral as a vehicle for social commentary. Even as late as the 1930s, Kenneth Burke could argue that literature was “equipment for living”:

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Scores of thousands of Vermont, leasing fifty wooded acres and an old farmhouse with the idea of producing maple syrup. At first he’s intoxicated with his dream. He after enduring a six-month New England winter and finding that long hours of manual labor can be mind-numbing as well as bone-crushing, he begins to revise his views. It dawns on him, moreover, that his social hours of manual labor can be mind-numbing as well as bone-crushing, after enduring a six-month New England winter and finding that long hours of manual labor can be mind-numbing as well as bone-crushing, he begins to revise his views. It dawns on him, moreover, that his social
Richard Kim ’69

has served as president of the Walla Walla Valley Board of Directors and was president in 1984 and a member since 1969 and a Rotary Club member.

Alumni Association Alumni Achievement Award in April. He spent 15 years teaching English in various school districts in Washington before becoming Tacoma Community College’s first dean of instruction in 1966. In 1985, he became deputy director of the Washington State Board for Community College Education, a position he promoted to in 1987 and held that post until 1987.

Richard F. Kim ’51 Pharmacy, had the charge to build a former Warren Memorial at the Vancouver division of the Portland, Oregon Veterans Administration Medical Center. He and his fellow veterans raised about $15,000 for the project. He did most of the design work, public community, and paperwork. Kim’s father Chan Jay Kim was born in South Korea and graduated from WSU in 1922. His brother, Chan Jay Park Kao, Jr., attended Washington State in 1947 and was killed during the Korean War. During the war Richard Kao served as a Corporal in the U.S. Navy, primarily at the Naval Medical Center in Bethesda, Maryland. He has worked as a pharmacist for 50 years, 27 of which he worked as a chief pharmacist in VA Hospitals around the country.

Audrey Harley Murray ’55 and Harold Murray ’54 Crim. Eng. were friends at WSU. They met up again after their spouses passed away. They are now married and live in Arizona.

John N. Terrill ’64 (EDM), widely recognized as the father of the state’s community college system, was honored with the Washington State University Alumni Association Humanities Improvement Award in April. He spent 15 years teaching English in various school districts in Washington before becoming Tacoma Community College’s first dean of instruction in 1966. In 1985, he became deputy director of the Washington State Board for Community College Education, a position he promoted to in 1987 and held that post until 1987.

Stephen Ray (’65 Speech and Hearing) received the 2010 James J. Hagen Career Award for Research in Audiology. Founder of the National Center for Rehabilitation Audiology Research at the Portland VAHCS, he currently serves as director. The NCRAR is now the country’s leading research center in rehabilitative audiology. After graduating from WSU, he went on to study at the University of California at San Francisco, and received his PhD from the University of Washington. Ray still serves in a professor in the Departments of Otolaryngology and Neurology at Oregon Health & Science University and has taught at various universities throughout the state of Oregon.

Steven L. Korkchwitz (’68, 50 Ag. Enr.), president of Walla Walla Community College, was presented with the Washington State University Alumni Association Alumni Achievement Award in May for his dedication to higher education and many contributions to the economic vitality of the Walla Walla Valley and state. As a WSU alumnus, he served on the Board of Directors and was president in 1964 and has served as president of the Walla Walla Valley Chamber of Commerce.


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The double-bascule bridge across the Hylebos Waterway at the Port of Tacoma was built in 1938 and has been frozen in the open position since 2001. “Double-bascule means that it has two leaves that open and close,” says Breivik, a construction management graduate who is now managing the $15 million Hylebos project. “When it worked, it worked on the basis of the principle of a teeter-totter.” He raises his arm, imitating the way one arm of the bridge would, with a counter weight, open and close.

One day, nearly a decade ago, a drive shall broke and the bridge stopped opening. The city could have replaced the broken part for about $50,000, says Breivik. But after examining the timber sub, and concrete piers, the overall members decided the bridge should either be abandoned or overhauled. In 2004 an arrow fire

Hans Breivik ’88

About a bridge

By Hanslote Soderman: Tacoma has certainly had its share of broken bridges. But lately Hans Breivik ’88 has been coordinating the repair of one of them.

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
sound bites and editing a segment to show she’d like to see the film that Tomlinson dug everybody else’s projects,” he says. All the while, he felt guilty about taking the footage from the healing circle out. It wasn’t until a Dutch producer said she’d like to see the film that Tomlinson dug it out. He went through it again, selecting sound bites and editing a segment to show her. “I realized, ‘Oh my God, this is just perfect for today,’” says Tomlinson. “All the people we interviewed back then were living simply, sustainably. Isn’t that what we’re trying to do now?” He contacted the food coop’s Taschler and asked for help reaching the subjects. “One by one, I contacted them,” says Tomlinson. That October he took 58 minutes of film from the 1988 footage to the Okanagan barter fair where he knew he would find more of his subjects. “Many of them had forgotten I had filmed them. They were amazed and pleased to see it.” And a few agreed to let him follow them for the next two years. While some had moved away (one now lives for today,’” says Tomlinson. “All the people while some had moved away (one now lives far away), Tomlinson found Jeffrey Stonehill living on a large plantation in one of the outer islands in the Hawaiian chain. Given the lack of transporta- tion between islands, Jeanne and her husband still live on the islands they had been so enthusiastic about when he met them nearly two decades earlier. Marcya, who had come west to find a long-bearded guy and live in the mountains, today makes her home the Methow Valley where she farms and lives in a solar-powered home. Tomlinson found Jeffrey Stonehill living on a school bus on Lopez island where he gardened and taught music and language. And Skavet is farming producer and living communally and still organizing events like the healing gathering and the barter fair.

By knitting the then and now together in Back to the Garden, Tomlinson had captured a slice of our state’s history and culture. He knew that something that started in the 1960s was still going strong in the 1980s and had lasted and even grown to today. The movie has played at 15 film festivals internationally, from Seattle’s Film festival to Berlin, Tel Aviv, Amsterdam, and Barcelona. “I could have made this movie in 1988,” says Tomlinson. “But it wouldn’t have resonated the way it does now. ‘We’ve hit a Zeitgeist. People today are really responsive to these ideas.’ When they’re not traveling or making films in Seattle, Tomlinson and his wife have made time to go ‘Back to the Garden’ themselves. They’ve recently acquired a small, solar-powered cabin east of the Cascades.

The WASP flew over 60 million miles and logged nearly 100,000 flying hours in every air- plane in the American arsenal, from P-38 Mustang fighters to the B-29 Superfortress. Also, they fer- red more than 12,000 aircraft to bases abroad. A few of the more experienced women-pilots—and Jeanne was one of them—served as test pilots. When you think of test pilots you automatically think of exotic new aircraft just off the assembly lines. But these test pilots tested aircraft that had been badly damaged or worn out in war, then rebuild to fly. In October 1944, Jeanne was testing a BT-13 in transporta- tion jewels in Seattle, Tomlinson and his wife have made time to go ‘Back to the Garden’ themselves. They’ve recently acquired a small, solar-powered cabin east of the Cascades.

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The WASPs were civilians hired by the Army, with no benefits whatsoever. According to Lt. Col. Yemenne Patience, neither the military nor the U.S. Government assumed expenses for the flier’s funeral, nor even provided a military escort or a bag for her coffin. Jeanne’s fellow WASPs took collection money to pay for her funeral, and one of the ladies volunteered to accompany her body home to her parents.

There were 64 other women pilots—all without military benefits or honors. In 1977, President Jimmy Carter signed a bill granting veteran status for the WASPs. For Jeanne, without military benefits or honors.

Jeanne was chairman of the Makah Tribe in Neah Center.

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Jeanne Quane (SC 44 MA, ’71 EDJ) was WASP registrant from 1973 to 1990. He is the founder of the WSU Veteran’s Memorial and author of WSU Military Heroes: Veterans and Legends (Dowena Creek Publications 2005), which chronicles 128 war stories.

Edward Claplanhoo ‘56 bah-dik-too-ah
August 8, 1928–March 14, 2010

by Tim Steury :: Ed Claplanhoo ‘56 was chairman of the Makah Tribe in Neah Bay when a winter storm in 1970 eroded the bank above the beach at Cape Alava on the Olympic Peninsula coast, revealing the village of Ozette. The village, ancestral home to many Makahs, had been buried in a mudslide in the 1700s.

Once he realized what the storm had exposed, Claplanhoo called Richard Daugherty, an archaeologist at WSU. Daugherty had been the freshman class advisor in the early 1950s, and Claplanhoo had been the class treasurer.

Claplanhoo and Daugherty worked closely together to explore and preserve what archaeological cores found in Ozette, with the resulting artifacts and interpretation presented in the Makah Cultural and Research Center.

Thomas E. Lian (‘51 Pharm.), 79, January 19, 2010, Burnaby, B.C.
Bruce Monroe (‘51 Hist.), 72, April 12, 2010, Wenatchee
Donald E. Dodge (‘55 Pol.), 85, Jan 21, 2009, Richland.
Edward F. Renschler (‘44 Ag.), 77, January 14, 2010, New Hampshire.
Bagge Edwards-Carver (‘55 DVM), 85, April, 9, 2010, Portland, Oregon.
Jean J. Howard (‘54 Pharm.), 82, December 29, 2009, Salem.
Jack Mckale (‘56 Grad., ’75), March 31, 2010, Seattle.
Joseph Perry (‘59 PhD Sci.), 80, May 20, 2010, Bellingham, WA.

2000s
Frank Edward Pekel ’03, May 9, 2010, Pullman.
Faculty & Staff
Benita Berry, 86, April 22, 2010, former staff
Clinton J. Callaway, 80, retired staff, April 11, 2010, Pullman.
Reginald Ralph Engbahdon, worked in chemistry dept., 68, May 26, 2010, Moscow, Idaho.
Alex Fabian, retired electrician, 94, May 24, 2010, Spokane.

Sure, but can he tweet?

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www.LentilFest.com

Visit wsm.wsu.edu/Ozette gallery at wsm.wsu.edu.

 rediscover pullman at the national lentil festival!
The chapter on preventing revenge offers some solid ideas. It begins with a quote by Pablita Syms that sums it up nicely: “It is folly to punish your neighbor by fire when you live next door.”

For managers, or anyone working in an organization, the consequences of a workplace conflict can quickly escalate. Getting Even: The Truth About Workplace Revenge and How to Stop It takes a broad look at the causes of workplace revenge and methods of defining those situations.

Thomas Tripp, a professor of management at WSU Vancouver, focuses on workplace conflict in his research. In this text, he defines "revenge" as a common response to perceived harm. Based on their 15 years of research, Tripp and his co-author Robert Barz analyze workplace revenge as an often-misdirected or exaggerated attempt at achieving social justice.

The book does a fine job delivering practical advice on understanding, avoiding, or resolving revenge situations. These well-known authors (Blake, Anan Nai, Prost) self-published at some point. Granted, acceptance by a publisher generally indicates the publisher is willing to bet a great deal of money on the book’s success. But that success can depend as much on literary or political whims as enduring quality.

Still, I approached Legacy of Angels with some hesitation. The final novel of a self-published trilogy of historical fiction, it is a blend of family saga, Western romanticism, a little metaphysical fantasy. Its characters are overwrought at times, some of the plot twists require a little rolling suspension of disbelief, and the book would benefit from fewer adjectives describing the “Connelly woman.”

But B.J. Scott tells a great story, which starts in book one in Ireland with Kathleen Connolly and traces the trials and fortunes of her remarkable daughters through the Gold Rush, concluding with Bridgette, the grandchild, overcoming extraordinary odds and assuming leadership of her family’s holdings. “Never, ever, cross a Connelly woman,” she warns.

Live & Kickin’: The Wanderers 2012—Review by B.J. Scott::Authorhouse CDW. 2008::Review by Tom Derby: “The issue of whether to review self-published books remains here at WSVM periodically. The argument against reviewing such books assumes that publication by a commercial publisher promises some standard of quality, whereas self-publication is relegated to the ‘vanity’ press. However, a half hour in any bookstore should at least shed doubt on that assumption. Of course there are many pressing questions from which one can expect consistently excellent work. But there is also plenty of drivel produced by both commercial and ‘literary’ press. In the end, the reader and, by extension, the critic, is the final arbiter of taste and quality. Add to this scenario the fact that many....

Feel-good messages dominate. One track, “Change,” encourages love over drama, while another presses focusing on the ups rather than the downs. Themes of living life fully and recovering from setbacks are threaded throughout. Catchiness is its strong suit. The lyrics could use a little more weight. For all its playful and uplifting qualities, the album seems to be built for a more carefree day, something to blast on the long ride between Seattle and Pullman, or to dance to at a house party on College Hill, but generally not something to lie in bed and ponder.

Still, the infectiousness of the upbeat groove grows over time.
**Spiritual landscapes**

*Contemporary Aboriginal Paintings*

*From the Collection of Margaret Levi and Robert Kaplan*

WSU Museum of Art, October 1–December 11, 2010

Although the details and relationships vary amongst Australian Aboriginal groups, in the beginning the landscape of the world was formed by mythical ancestral beings. Every action of these ancestors had landscape consequences. According to the fine study *Aboriginal Art* by Howard Morphy, art establishes a connection with those foundational events, enabling people to maintain contact with a timeless spiritual dimension. Beginning in the 19th century, anthropologists trying to understand that relationship referred to “the Dreaming,” an exploration of the nature of the world. Not surprisingly, the translation is imperfect, and some Aborigines object to its use because the spiritual process is not dreaming, but reality. Nevertheless, art is both the means of access to Dreaming and also the product of Dreaming, resulting not only in laws, but maps.

Left, from top:

*Ngamaloo*, 2008, acrylic on linen
by Elizabeth Gordon (Balgo Hills region)

*Kapi Pati Yalli*, 2000, acrylic on linen
by Simon Hogan (Spinifex country)
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