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The spirit of the land grant institution: Had the intent of the land grant spirit been simply to produce homemakers or farmers or carpenters, Justin Morrill, the author of the act that established the land-grants 150 years ago, might have best looked for his model among the craft guilds of the fifteenth century, wrote Enoch Bryan in 1931, 15 years after he stepped down as the first enduring president of Washington State College. In one of four essays that make up *The Spirit of the Land-Grant Institutions* (reissued in 1961), Bryan argued that the curriculum prescribed by the land-grant legislation was academic rather than vocational. “It was far broader, far more fundamental,” he wrote.

In other words, the Morrill Act, or “charter,” as Bryan referred to it, represented a revolutionary shift in education, from the “verbalistic” to the scientific, shifting American education from an elite and narrow institution that produced mostly drudges and lawyers, to a rich process accessible by the common man and woman.

As radical and fresh as the idea might be, Bryan argued that the origins of the land-grant spirit lay with Thomas Jefferson’s 1818 charter establishing the University of Virginia. Both, wrote Bryan, represent a shift to the natural and physical sciences, “to historical, political and economic science, to the study of agriculture, commerce and industry, as based on these sciences with a very distinct declaration of purpose, through these instruments, of contributing to the subsistence, comfort, health and happiness of all the people…”

Bryan was emphatic that this new educational spirit did not exclude the classics. Nor the arts. It was Bryan, after all, who established a music curriculum at Washington State College. Farmers need music, too, he believed.

So passionate was Bryan about the land-grant spirit that created his Washington State Agricultural College he wrote about it throughout his life. More immediately, while still president, he envisioned an agricultural utopian community in which his students might live out the ideals and practices they learned while under his tutelage, sinking his savings into 300 acres of land on a bench above the Snake River, just above the site of the Little Goose Dam.

This year’s observances of the 150th anniversary of the first Morrill Act vary amongst the more than 70 original land-grant colleges, most of which are now universities. WSU joined 27 others in presenting its vision of the modern land grant through a display, “Feed the World. Power the Planet,” at the Smithsonian Folklife Festival this summer. The anniversary also presents an occasion to ponder whether the spirit of the land-grant still holds true.

It certainly does for John Reganold, Lynne Carpenter-Boggs, Brad Jaeckel, and others involved in WSU’s organic major and farm. And, evidently, to Chuck and Louanna Eggert, who recently gave $5 million to WSU to establish a much larger and more ambitious organic farm on campus. The Eggerts, who met at WSU, founded Pacific Natural Foods.

According to Reganold, the organic major and the first organic farm, located next to Tukey Orchard, were established for a dual purpose: to train students who wanted to learn about sustainable agriculture and, perhaps more important, to bring more people back into agriculture.

“When I took this to the faculty in 2002,” says Reganold, “we were losing people in agriculture, across the U.S. That’s turning around.”

By 2002, the segment of the American labor force working in agriculture had dropped below 2 percent, down from 16 percent in 1945 and 41 percent in 1900.

Similar to Bryan’s vision, the purpose of the organic agriculture major and the new farm are not simply to produce organic farmers, but to investigate the science behind the discipline, explaining, enhancing, and developing techniques that are increasingly being adopted by other agricultural approaches.

Sadly, Bryan’s dreams of a utopian community, after thriving briefly, succumbed to a common Western affliction, the lack of sufficient irrigation. The Eggert Family Organic Farm and the associated potential advances in agricultural knowledge and understanding may well be seen as an affirmation of his dreams.
Three Great Ways to Belong to One Great Organization.

There are over twice as many members of the WSU Alumni Association (WSUAA) today than there were just a few short years ago. They joined to support student scholarships, take advantage of all the incredible member benefits, and connect with other Cougars. We extend our thanks to all the alumni, students, friends, faculty, and staff whose membership has helped the WSUAA claim its rightful place among the finest and fastest-growing alumni associations in the country. We salute our Annual, Life, and now Platinum Life Members.

New: Platinum Life Membership.

Platinum Life Membership is the newest way to belong to the WSUAA. It was suggested by and created for Cougs who want to help the WSUAA do even more for WSU. Platinum Life Members enjoy all the same great benefits and services as Annual and Life Members, plus a growing suite of extras.

If you have not yet joined, or you are a current member interested in one of the other membership types, please sign up today. Your membership—regardless of which type—is vital to the continued success of the WSUAA and WSU.
Not Saddle Mountains

On my second time through the very enjoyable edition I looked more closely at the central picture on page 46 which identified the view as "Columbia River, Facing Saddle Mountains." This picture does not show the Saddle Mountains, which are north of the Columbia, but as far as I can tell portrays the view up over Umatilla west of VVemna River where they 24 crosses the Columbia. Just to the right in the center of the picture is a blakc-green spot which is part of the BWI's Money Substation, which is tucked between the river and the ridge and handles power lines into and out of central Hanford. At one point in the sub-station's history it was the principal electrical power source for central Hanford and the reactors, which I could see where this photo was taken.

Jan R. (Sandra Rognberg) ’74, ’75

Flashbacks

Your Summer 2012 issue was a flashback and a flash-forward in connective articles. "The Collector," a well-told story of the Reppa Papers, transported me to the early 1980s—the Regla Papers, transported me in consecutive articles. "The warehouse," let me look closely at the central picture on page 45 which identified the view as "The Murrow Boys" where this photo was taken. I found the Summer 2012 issue informative and visually appealing as always but discovered, in addition, two personal surprises. I. Horace Nemecek is a name that has burned itself into my brain but I never knew anything about him. At the end of my junior year (1956, I think), I unexpectedly received the I. Horace Nemecek Award for the student with the most promise of making a contribution to the humanities. I didn’t apply for this—at just arrived as a letter, with a check for $150, as I recall. It was fascinating to learn about him and his interests in the collectors story. As he died in 1949, the award must have been set up by his family as a memorial. I received it seven years later. I don’t know whether it is still given. The amount would seem trivial today but I think it more than covered tuition for a term (or two) even then. I would love to get in touch with his daughter Mary Emma Erickson, as it has occurred to me over the years that I HAVE made a contribution to the humanities I would like her to know that.

Ellen Fransen Devoe’s ’57 Seattle

I enjoyed your article on "The Murrow Boys" (page 18, Summer 2012 issue) and was fascinated by the building is a 62,000-square-foot state-of-art research facility dedicated to the study of diseases typically originating in livestock and their transmission to humans.

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When jetliners routinely fly coast to coast on fuel derived from sticks, branches, and bark left on the forest floor, we’ll have pioneer researchers like WSU’s Xiao Zhang to thank. Dr. Zhang, a leading expert in converting non-food woody biomass to biofuel, is working hard to make the process cost-effective and sustainable.

It’s all part of our search for a clean, renewable energy future—here in Washington state… and beyond.

Looking for life’s origins in the clouds of a moon

by Eric Sorensen

On the eleventh floor of the Webster Physical Sciences Building, Carol Turse watches over an array of glass tubes, flasks, and electrodes buzzing with 45,000 volts of electricity. Looking out the window, she takes in one of the better views of Pullman and the Palouse hills; looking inside the glasswork of her lab, she sees the atmosphere of Saturn’s largest moon, Titan, and all goes right, elements of life in the making.

With clouds and a thick, planet-like atmosphere, Titan is unique among the moons in our solar system. It might also be conducive to creating amino acids, the building blocks of life, which is what Turse hopes to see in a few days.

Turse, a doctoral candidate in the School of the Environment’s Laboratory for Astrobiological Investigations, is conducting a variation of the Miller-Urey experiment, the first successful laboratory attempt to test theories about the origin of life. In one flask she is boiling a mix of methane and ammonia, simulating conditions on Titan’s surface.

“I call it the ocean flask,” she says. As the compounds boil, vapors rise to an “atmosphere flask” where they are exposed to the spark from a Tesla coil. This simulates lightning or some sort of static discharge, which can break the bonds of ammonia or methane and ease the way for more complex organic compounds to form. As the vapors condense, they run through a tube back to the ocean flask. If things go right, a week or so of this activity will produce a primordial soup similar to the “warm little pond” that Charles Darwin once speculated could lead to the chemical creation of a protein around which life would form.

Stanley Miller, a graduate student of the Nobel laureate and then-University of Chicago physicist Harold Urey, first conducted the experiment in 1952 after Urey suggested a more primitive earth atmosphere of methane and ammonia may have helped life emerge. Miller built a setup similar to Turse’s and after a week had a yellow-brown solution that contained glycine and several other amino acids.

Miller presented his findings in a seminar attended by Urey and Enrico Fermi, the University of Chicago physicist. At one point Fermi asked Urey if Miller may have indeed demonstrated the way life originated.

“Let me put it this way, Enrico,” replied Urey. “If God didn’t do it this way, he overlooked a good bet.”

Scientists now believe early Earth’s atmosphere was mostly carbon dioxide and nitrogen with little reactive methane and ammonia. Miller could not replicate his results in that milieu, but one of his former students did once he took into account other factors.

Titan also has conditions that challenge a Miller-Urey setup, the chief one being intense
World vets by Andrea Castillo ’12 — Quaking all over, a dirty yellow and white puppy with a large pothole where its eye should be, Chancho, the veterinarian’s name him because of his piglike round belly, initially had a grave prognosis. Found wandering along the street, and visibly weak with parasites and tumors, he did not have long to live.

But, after running her apparatus for a week, Turse analyzed the resulting, cloudy soup and found four amino acids—not as many as Miller found, but amino acids nonetheless.

She replicated the experiment and just before turning the equipment off, noticed a bright pink droplet on one of the electrodes, and kept the equipment running. Now she is taking samples — more than 3,500 people have volunteered for the organization in 36 countries. All volunteers are self-sufficient.

Students from the United States who want to participate in the summer training sessions. They receive everything they need to have a veterinary training program, like World Vets field projects, is self-sufficient.

Students from the United States who want to participate in the summer training sessions.

The puppy spends the night on intravenous fluids and medication. When the veterinarians return the next morning, he is returned pretty closely mimics what the senior surgery students.

Chancho was the second patient seen that day by World Vets volunteers at the Surgical Training Center, a veterinary clinic located in Granada, Nicaragua. A nonprofit organization headquartered in Fargo, North Dakota, World Vets provides veterinary aid and disaster relief in developing countries. It opened the clinic to house its new International Veterinary Medicine Program, which will train hundreds of veterinarians and veterinary students from across the globe.

Since 2000, the start-up nonprofit has grown into an international organization that has administered thousands of emergency surgeries conducted by volunteer veterinarians in developing countries. World Vets also responds to international crises, from rescuing stranded pets in flood-ravaged Thailand to scrapping debris for animals that survived the 2011 earthquake in Japan.

“We started out with nothing—just the vision that veterinarians from all over the U.S. could help on projects,” says Dr. Cathy King ’97 DVM, who started World Vets with a donation jar at her clinic in Deer Park. “It just grew from there and there’s never been a lack of a full-time job for me. We’ve sent out a team almost every week of the year.”

The money from their tuition pays for the Latin American students during the year. Animals brought in for five classes will also get neutered for free, continuing to help curb animal overpopulation in Nicaragua.

That is the beautiful part about this program,” says Claudio Majorpa, general manager of the Surgical Training Center. “The Latin American students pay absolutely nothing to participate in the training sessions. They receive everything they will need, including a DVD of the surgeries they can watch at home. This training, if not part of a self-sufficient program, would be very expensive.”

Majorpa says the clinic and training sessions will develop better veterinarians in Nicaragua. “Veterinarians in Nicaragua have all the knowledge to perform surgeries but don’t have the practice,” he says. “Not all of the universities in this country have a surgery room with all the equipment necessary. This clinic meets those necessities.”

In March, a group of 11 volunteers traveled to the Surgical Training Center as part of a World Vets field project, providing free spay/neuter services and other medical treatments for small animals. The team completed about 105 basic consultations and 75 surgeries in four days of work.

Karen Allan ’94 DVM, who led the volunteer group as a field service veterinarian, says the new facility is great for veterinary students still learning to do surgery. World Vets teams don’t usually get to work on real operating tables and in real clinics during field projects, she says.

“We’ve done surgery in a fire station, a Catholic church, an abandoned greenhouse and on basketball courts—sometimes without water or electricity,” she says. “Allan. “The new clinic is just super pretty closely mimics what the senior surgery students will operate from in their vet school.”

One of King’s long-term visions for World Vets is to open training centers in different regions of the world. Once the Granada program is fine-tuned and running smoothly, she would like to open up similar centers and programs in Africa and parts of Asia.

As for Chancho, the once debilitated puppy in now playful and energetic, his cloudy tail wagging constantly.

World Vets is to open training centers in different
by Kaatin Gillespie '13 | Charles Francis Adams was a wealthy businessman from Boston, well-enough provided for, so he could devote his life to his interests. As he grew older, a new set of interests emerged, and he began to travel and explore the world. He was particularly interested in the history of science and technology, and he spent much of his time studying the latest developments in these fields. He was also a keen observer of the natural world, and he enjoyed exploring the wilderness and the countryside. He was a good friend to many scientists and engineers, and he supported their work by providing them with funds and resources. He was a generous man, and he was known for his good nature and his kind heart. He was a true gentleman, and he was beloved by all who knew him. He passed away peacefully in his sleep, leaving behind a legacy of knowledge and wisdom that continues to inspire us today.
treatment of the players on the—Logan Mayes, Leon Brooks, Ricky Galvin, Jeff Tuel, Dominic Williams, and more—emphasizes the Red Raiders’ winning ways. Leach demands that his players be steady and methodical, making sure that nothing is overlooked.

As I prepare to leave, Leach tells me about his recent trip to Japan. He had gone on a nine-day coaching clinic, eating Japanese food and sleeping in too-short beds at the “Lost in Translation” hotel, and trying out a traditional Japanese tub. He lingers on the details, which grab Leach’s attention and leads him to reminisce about his own time in Japan. He had gone on a nine-day coaching clinic, eating foods new to him, stepping in two-inch beds at the “Lost in Translation” hotel, and trying out a traditional Japanese tub. He lingers on the details which he witnessed soon after he arrived.

Leach says it’s clear that students have plenty of support at WSU, partly because of Pullman’s unique college town atmosphere, which he witnessed when he was a student in 2009 after Texas Tech.

“When we first got here, we drove around at 20-30 mph in the city, and saw thinking I’d see students hanging around, but nobody’s downtown. I said to my wife, ‘What day is it? School’s going on, right?’”

Leach during the interview with Washington State University’s head football coach Mike Leach.
IN 1944, when Glenn Aldrich was 12, he helped his father carry blueberry plants into an old sheep pasture next to their home. The family then planted the first commercial blueberries in Lewis County and some of the first in the state.

Maybe it was fate, says Aldrich ’58, ’62, although somehow his father had found the perfect crop for the soft acid soils along the Cowlitz River. The berries flourished there in Montesano, a pretty pocket of the valley sixty-eight years later those berry bushes tower over Aldrich. In the intervening years, he has added some 20 more acres, spent time in the Air Force, taught vocational ag to high schoolers, raised sons Chris ’87 and Jason ’92, and helped found the Washington Blueberry Commission in 1981.

When I called the farm to see if Aldrich would be willing to be interviewed for this story, his wife Wisten was quick to answer. “Oh sure. He majored in talking,” she laughed. “Well, he majored in agriculture, I think. But he could have majored in talking.”

So I jog up the drive between that original field of blueberries and a set of races. I’m not surprised that Aldrich has started the conversation before we even make our introductions. Pointing to the field he explains there are Rainbow blueberries, an early variety known for high yields, size, and flavor. There are three or four other fields around the state that are about the same age, Aldrich explains, and even older. Those first plants on his farm came from Eberhardt’s Nursery on Steamboat Island, in south Puget Sound. Farmer Joe Eberhardt helped introduce the blueberry to the region and also developed some of his own varieties—the Eberhardt and the Olympia.

The cultivated blueberry hasn’t been around all that long. The highbush cultivated blueberry that we know today was born in New Jersey in the early twentieth century, Aldrich says, alluding to the work of Elizabeth White. The daughter of a cranberry farmer, White enlisted Jersey in the early twentieth century, Aldrich says, alluding to the work of Elizabeth White. The daughter of a cranberry farmer, White enlisted the help of local wild blueberry pickers to go into the woods around her farm in Elizabeth White’s farm were used to make the early crosses and until recently were in the genetics of almost all commercial berries.

In his decades growing berries for sale and berry bushes for nursery stock, Aldrich has seen the industry develop—and now, as a new health information about the berries has become fodder for the mainstream press, demand has skyrocketed. “There’s no doubt about it, the health news has been fabulous for our marketing,” according to the U.S. Blueberry Council, the fruit is an excellent source of vitamin C, manganese, fiber, and antioxidants.

It’s the anthocyanins, says Aldrich. The pigments that make the blueberry blue are also found in eggplants, black currants, and cranberries. They’re credited with having high antioxidant effects, protecting the cardiovascular system from oxidized cholesterol, and reducing artery-clogging plaque. Research on the benefits of blueberries is still in its early stages, but recent findings have credited the fruit for lowering blood sugar, preserving sight by protecting against macular degeneration, and protecting memory.

For decades most of Washington’s blueberry farms have been like Aldrich’s: small, intensive, and local. “The west side farms can range from a fraction of an acre to hundreds of acres,” says Alan Schreiber, administrator of the Washington Blueberry Commission. But in recent years blueberries have moved east of the Cascades into the Columbia Basin, where they’re being planted by the hundreds of acres. The big issues on the east side are irrigation and making the soil acid enough to host the high-yielding blueberry plants. “Heat is a lesser concern. Still the berries do best in cooler environments at the edges of woods, in coastal areas, and in mountain clearings.

Only two good varieties came out of those first efforts, but over the next several years, according to Coville’s reports, White and her collaborators produced several more successful varieties.

Coville worked with farmers along the eastern seaboard in places like New Jersey and New Hampshire to find wild cultivars to use in crosses and hybrids and establish the foundation for our blueberry varieties today. Several, including Brooks, Rubel, and Sooy (named for one of the pickers from Elizabeth White’s farm) were used to make the early crosses and until recently were in the genetics of almost all commercial berries.

But there are benefits east of the mountains, says Schreiber. “They don’t have the insects or diseases that occur in wetter areas, which means there are lots of organic berries.”

With the increase in demand and new berry bushes going in all over the state, blueberry production has increased from 20 million pounds to 40 million since Schreiber started with the commission four years ago. “Each year our crop has been a record size,” he says. “We’re expecting that again in 2012.”

For those who want to grow their own blueberries, WSU Extension advises planting them during their dormant season between January and March west of the Cascades, or March to April in Eastern Washington. Ideally they would be two-year-old root stock or three-year-old plants in containers. When the lack of acidity is an issue, home gardeners can amend the soil with shredded pine bark or a sulfur product. They reach full production stage around eight years—getting five to six feet high and producing up to 25 pounds of fruit per plant. The bush blooms in late April and early May and are ready to be picked from July through September. “In the warmest spots in Eastern Washington they will start picking at the end of June,” says Schreiber. “August is the peak of the season. And the last will be picked in early October.”

Pick your blueberries free froze days after they turn blue, when the sugar levels are highest. Then check back every three to five days since berries on suckers do not all ripen at the same time. Fresh berries should last up to two weeks in a refrigerator. They also freeze well. Simply rinse them and spread them on a cookie sheet and set in a freezer until frozen through. Then store them in baggies.

For most home berry growers, the biggest problem is the birds that will swoop in and steal away the berries as soon as they ripen. The best solution is simply netting the berries to keep the birds out. But there are a few other concerns, including an aptly named fungus, downy berry rust, which leaves the fruit white, hard, and inedible. Mummy berry is prevalent after long wet springs, especially if affected fruit from the previous year is left on the ground under the bush. There is a fungal spore to use on developing blossoms, but one of the best ways to address this is to take out beneath the bush in early spring and to immediately remove the blighted shoots and affected berries when you see them.
Yet another existential mystery

by Tom Stovar

Although humans greatly outnumber our closest living relatives the great apes, for some reason the genetic diversity of modern humans is much lower, posing a puzzle that only gets more puzzling the further geneticists look into our evolutionary past. Not only is this disparity counterintuitive, it contradicts a basic tenet of population genetics theory, that larger populations should display greater genetic diversity.

Luke Premo, an assistant professor of anthropology, has taken a stab, with colleagues from the University of Leipzig, Germany, at looking at cultural differentiation among spatially defined groups. Premo and Hublin constructed a computer model to test their notion that cultural differentiation among groups can play a role in curtailing human genetic diversity. Culture in this sense is defined as learned information that can lead to variation in behavior. Culture is not exclusive to humans. Says Premo, the cultural variation among chimpanzee groups—say, the practice of cracking nuts on a rock anvil instead of a log anvil—are unlikely to be maintained in groups as they move between groups and interbreeding.

But with humans, cultural traits, whether they be religious, language, or cuisine, can be more effective in keeping groups reproductively isolated than genetic diversity alone. What causes the disparity?

The result? In populations structured by a high cultural similarity threshold, natural selection could have suppressed genetic diversity for thousands of generations, even in the absence of bottlenecks or expansions in census population size.

Ongoing research of the Middle Stone Age archaeological record, says Premo, is likely to provide an empirical test of the provocative conclusion that cultural differentiation may have played an important role in explaining reduced genetic diversity in Pleistocene hominins and our ancestors.

Cherries in two dimensions

by Nella Letizia

Two-year-old trees in the WSU Ranch Experimental Orchards near Prosser are the first step in transforming a 100-year-old production system for sweet cherries. The trees’ unique genetics, bred for high fruit quality and disease resistance, are the foundation of a new, more sustainable, more economically competitive system for sweet cherry orchards.

Immigration reform could reduce the labor pool even further. Georgia’s 2012 order with its immigration enforcement law serves as a cautionary tale. An economic impact report estimates that after HB 87 took effect on July 1, labor-related issues to participating growers after the spring and summer harvest were $75 million.
One Washington sweet cherry grower, Denny Hayden ‘73, president of Hayden Farms in Pasco, is paying close attention to the Georgia case. “We’re one political decision away from disaster,” Hayden says. “We started moving in this direction several years ago. But we decided we’re never going to plant a traditional cherry tree again,” he adds. “We’ve seen the advantages of the UFO. It costs a lot to get the block in, but we think in the long run that the yield advantages that we’ve seen so far and the packing advantages will outweigh the initial cost of establishment.”

The key is in promoting uprights. The more uprights in the first year, the better the chance for fruiting sooner—and the higher the yields. In 2011, Whiting, graduate student Antonia Sanchez-Labbe, Joseph Grant of University of California, and Lynn Long of Oregon State University tested how timing the horizontal training of initial growth affects yield and fruit size. The team discovered that the earlier the trees were tied down horizontally, the more upright shoots sprouted. Along with training, proper pruning techniques ensured removal of upright shoots.

Now completing their second year of the USDA grant, SGI researchers from around the country are also working to breed a sweet cherry variety with fruit that falls easily off the stem, develop a mobile cherry harvester, extend shelf life through better packaging, assess consumer preference of stem-free cherries, and delve into the economics of mechanical harvest.

“"The first day we put it live, someone came in and wanted to know how long we’ve had fencing at WSU,” he says. “We searched and found the first mention of fencing as a sport in 1906, so we could work back from there. Without that tool, how do you even start to answer that question?!”

The Powwow can lead to fascinating bits of WSU and alumni history. A glance through a 1962 Powwow reveals that James Cairns ’59 and Billie (Larson) Cairns ’57 were among the first Peace Corps volunteers in India and met Jacqueline Kennedy there.

O’English says the Chronicle alone have almost 38,000 pages available. Many of the WSU football programs are also on the website, and O’English hopes to digitize departmental histories, HillTopics (WSU’s alumni magazine from 1970 to 2000), and The Daily Evergreen in the future. Student Publications still sell volumes of The Chinook from 1896 to the present, if you are looking for those books.

You can access the digital archives of the Chronicle via wsm.wsu.edu EXTRA/chinook and the Powwow at wsm.wsu.edu EXTRA/powwow.

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Illustration: David Vogin

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exports. Moreover, every commercial Boeing airplane has some parts exported to China, at $3.9 billion and representing 55 percent of all aviation since 1972. Aerospace products are now Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s but linguistic, informational, and trade barriers remain.

His work, and that of many other faculty, staff, and students at WSU, is helping reinforce the trans-Pacific connection that is so crucial to the cultural exchange and economic success of both Washington and China, but linguistic, informational, and trade barriers remain.

Boeing, our largest exporting company and an icon of Washington state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership.

Like Zhao, many Chinese students attend WSU for its strengths in engineering, agriculture, clean energy, business, and other programs. In fact, according to Pearson Albums, WSU has 25 percent of its international student programs, 45 percent of our international students are from China, far more than from any other country.

"We have a robust connection with China and it’s only getting stronger," says Zhao. Arasu says a recent agreement signed with the Chinese government’s China Scholarship Council will fund students to either earn their doctorates at WSU or conduct part of their research and build academic collaborations with WSU. Currently, 20 to 25 students are doing their doctoral work at WSU and another ten are involved with a shorter-term research. Chinese students also make an impact economically. Eric Schinfeldt, president of the Washington Council on International Trade, says the state sees about $450 million in benefit from students coming here.

Moreover, says Schinfeldt, “just by educating students from China, you’re facilitating trade with China. They develop an affinity with Washington state. We sometimes forget about these relationships when we get so focused on commodity trade.”

Over in the College of Business, the Chengdu-based program at the Southeastern University of Finance and Economics has been bringing in many Chinese scholars and students, including an executive MBA exchange. The dean of the college, Eric Spangenberg, says another benefit for U.S. students is that “they learn by living with Chinese students, working on projects, sitting in class with Chinese students and professors.”

These experiences are essential for an international business program, says Spangenberg, but it “takes a long time to establish relationships and reputation. Raman Rose is like Lewis and Clark. He was able to help us keep that relationship alive, and as globalization has become a priority, it’s paid off. WSU’s international business programs are strong, says Zhao. They value more the wines from France because of reputation. In price, the wines from Chile are much lower than United States,” says Zhao.

Boeing, our largest exporting company and an icon of Washington state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. In the last few years China overtook Japan as Washington’s top partnership. In 1916, Boeing’s first engineer was China-born state, projects that over the next 20 years China will need 5,000 new state’s imports. 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or China studies or international relations, but there’s a need to encour-
gen students in programs like engineering to participate in study abroad.
1f students at WSU, especially in engineering, don’t have basic
1knowledge about this country, which many companies have to deal
ith, they’ll be seriously disadvantaged,” he says.
Christopher Lupke, an associate professor who directs WSU’s Chinese
1anguage program, concur. “Students want to combine a real knowledge
of China that has depth, that has focus, with some other things, such
as a double major in business,” says Lupke. “A double major in engineering
and Chinese is simply more marketable.”

For many, the language itself imposes a psychological barrier. Lupke
1ears from people that Chinese is impossible to learn, and it’s the most
difficult language in the world. The Chinese language’s mystique, he
1ays, is completely untrue.

“They study among students from Yale, Stanford, and other elite schools
get that intensive training through a study abroad program in Harbin.
the high level of proficiency necessary to be fluent. WSU students can
1o Goethe-Institut, promotes Chinese language instruction worldwide.
The university also has a full-time Chinese language instructor fully funded
1 a “tectonic shift in students who want advanced Chinese language.”
1lready have the costs of studying in China, students have access to a
umber of scholarships. The College of Business students have help from
Scott 72 and Linda Carson’s million-dollar donation for undergraduates
to study abroad.

Others have been awarded the David L. Boren Scholarship out of
the Department of Defense, providing $20,000 a year for study abroad
languages in the critical interest of the U.S., such as Chinese. “In the
past five to seven years, we’ve received 14 of those scholarships, which
I think is more than any other university to whom we would compare ourselves,” says Lupke.

The federal government, recognizing the strategic importance of
Americans understanding Chinese language and culture, also began the
700,000 Strong initiative in 2010 to dramatically increase the number
1 students studying in China. Ten times more Chinese students come
to the United States than Americans who study in China, a number that
leaps feels is untenable.

“It’s absolutely critical that we have as many American students
1arning Chinese as possible. Those students need to be spread across a wide range of disciplines; we need engineers, lawyers,
doctors, nurses, people in business, agricultural economics,” he
ays.

Another form of exchange comes from WSU professors and
researchers already in these fields. Arasu says collaborations are taking
place, with more on the way. Smart grid expert and WSU engineering
professor Anjan Bose has been invited by the president of Tsinghua
University, one of China’s top engineering schools, to evaluate their
1lectrical engineering program.

Chinese food giant COFCO has expressed interest in biological
systems researcher Jung Tang’s microwave sterilization techniques. Also
in food safety. Regents professor in chemistry Herbert Hill’s work
with mobility spectrometry could ease the identification of contaminants,
an area of interest to both the U.S. and China. Shuling Chen works
with several partners, including China Agricultural University, in his renewable
energy research.

The research partnerships play to WSU’s strengths, just as a new export outreach program builds
on WSU’s land grant and extension mission. The Washington Small Business Development Center (WSBDC), operated under the auspices of
WSU and the U.S. Small Business Administration, received a grant in 2010 to ramp up efforts by WSU in the area that was “heavily
1ing a lot of interest” at the time.

One purpose of the proposal was taking advantage of the state-
wide footprint that we already had,” says Terry Chambers, director of
the WSBDC. He says the existing 26 advising centers all over the state
were in a unique position to promote both national and state export
initiatives.

As part of the grant Chambers hired Vern Jenkins and three other
1nternational trade specialists, who go out to small businesses and work
with them to assess their readiness to export, prepare an export strategy,
research markets, and get over the many informational barriers to moving
their products overseas.

Jenkins, who has worked in China for decades and is fluent in
Mandarin, describes his work as easing the process for companies to work
in countries like China. “We work with a lot of clients that have cursory
experience or export with us, they’re still learning how to do it. It’s an
so easy thing to just export,” he says. “We’re looking for ways to simplify,
demystify, and accelerate.”

Chambers says that many organizations have export information
out there, but don’t have the resources to work with new-to-export
companies because of the level of interaction required. The WSBDC also
offers business advice to those companies. Whether it’s a custom-lighting
company in Spokane or a fruit processor in Wenatchee, says Chambers,
“the combination of business advice and trade specialist has been very
powerful in moving them through the export process.”

One of Jenkin’s duties is traveling extensively through the state
to build awareness of the export program, from chambers of commerce
to the companies’ own places of business, with great response. He says,
“When the light bulb goes on, and they realize we have expertise and
advice in programs at no cost to them, they go, ‘Wow. Maybe I am
willing to try it.’”

After twelve months, they have around 250 clients statewide and
at least 20 percent are now exporting. It usually takes two to three years
to begin exporting, that’s a successful program, says Chambers.

The WSBDC export assistance program also provides educational resources
for WSU student interns who deliver market research.

Without them, our ability to help companies move would be substan-
tially more difficult. It would be impossible to help small interna-
tional trade specialists: time to do all that research, so the WSU interns are a godsend,” says Chambers.

Despite the support, Jenkins notes that not all small businesses
will succeed in exporting to China. “It’s prudent for a small business to
ask why should I go to China, is there a market there for me, and
what are the risks going into that market,” he says. “Doing business
in any culture, including China, is understanding what that environ-
ment is like.”

In working through the efforts of the WSBDC, along with their partners at
WSU’s IMPACT Center, Washington’s exports increased 9 percent to
a record $46.4 billion in 2011. The state is the largest exporter per capita
in the United States, but the path to China for both trade and cultural
exchange is not completely clear.

EVE RNONE INVOLVED WITH CHINA AND TRADE KNOWS
SOME OF THE STICKING POINTS. Differences in intellectual
property rights affect a number of Washington companies, from software
firms like Microsoft to pharmaceuticals to products that may emerge
from WSU’s research. Until stronger copyright and patent laws can be enforced in China, some companies will have difficulty, says Schofield.

Regulatory hurdles can also hinder exporters. “There is a lack of
regulatory transparency for many processed agricultural products.
The product can even be rejected at customs in China,” says Zhao.

Political concerns about China may give some companies pause
as well. Chen researches the middle class in China and their interest
in pursuing reforms, and he believes the rising middle class is pro-American
in terms of lifestyle and ideals, but it’s complicated.

“The middle class is in a pretty tricky situation,” he says. “On the
one hand, they want the political stability. On the other hand, they feel
kind of stifled by the political system. I believe most of the middle class
is pretty ambivalent.”

One say Chinese students can both learn about America and practice
the ideas—without jeopardizing their economic stability at home—for
by coming to the U.S. to study, says Chen. They now have the financial
resources to do that, and increasingly they are then returning to
China.

For WSU’s students and faculty, the cost, along with perceived
linguistic and psychological barriers, should not keep them from coming
to China and learning about the culture, says Arasu. She knows many
students can’t afford to study abroad, because of financial or degree
completion constraints.

“What are we doing for the 97 percent of our students who don’t
have the privilege or opportunity to go abroad?” she says. Part of
the solution is placing international trade specialists on campus,
students and American students here on campus, says Arasu, citing a recent exchange
program.

WSU still needs increased scholarships for study abroad and alignment
curricula with overseas programs to ease the transfer of credits, she
ays, but the need for students with global experience, even in just
a classroom setting, is absolutely necessary.

Chen agrees. “This kind of change is imminent. We cannot wait until
the students themselves realize, now I’m working and realize I wish
had studied more about Chinese society or course.” But it’s too late.

As students and businesses come and go from Chengdu or other
places in China, they’re also transforming. “More important than this
is the students themselves later realize, ‘Now I’m working and realize I wish
had studied more about Chinese society or course.” But it’s too late.

Chen inspires. “This kind of change is imminent. We cannot wait until
the students themselves realize, now I’m working and realize I wish
had studied more about Chinese society or course.” But it’s too late.

Chen inspires. “This kind of change is imminent. We cannot wait until
the students themselves realize, now I’m working and realize I wish
had studied more about Chinese society or course.” But it’s too late.
INTENT ON PROGRAMMING a machine to cut a section of sheet metal, six engineering students hunch around a worktable on an upper floor of a factory that designs and builds tooling and automation for the aerospace industry.

The space is bright and warm. A tinkerer’s dream of wires, tubes, tools, fittings, shelves, cords, and hardware surrounds them. The students scrutinize a screen, scribble in their notebooks, and scratch their heads. Determined to arrange a resistor ladder electrical circuit to tell the machine to move a single part before lunch, Josh Sackos frowns at a laptop. “You could just try to run it and see what happens,” offers Mohammad Faraj.

Rick Calawa, the engineer leading the spring break short course at Everett-based Electroimpact, agrees: “It’s not a nuclear launch,” he says. “Give it a try.” Sackos taps at the keyboard. His classmates lean in. He gives the run command and ... nothing. Then Faraj steps up to the main computer and after some discussion, types in a change. All of a sudden the giant metal contraption rattles noisily as a pin rapidly moves forward and back. But it’s not quite what they wanted.

Calawa, the expert, tries to offer a solution.

“Wait,” says one of them. “Don’t give us the whole thing.” A few more minutes of changing the commands, they finally sort it out and with a sigh of relief, Calawa takes off for lunch. Patrick Noll, Ben Hazari, and Kevin Kline stay at the table pulling sandwiches and energy bars from paper bags and talking about how they got into engineering at WSU. “In high school someone said, ‘Hey, you should go into engineering,’” says Noll, “and I thought, ‘Why not?’”

These are jobs for people who like math and science and who might prefer blue jeans to blazers. And, frankly, these guys like solving puzzles. “This stuff we’re doing here is really appealing,” says Hazari, gesturing around the factory.

“We’re learning new ways to automate things,” adds Kline. “We could be engineering some part over and over. But this level of stuff is cool. It’s more inventive.”

“Inventive.” “Cool.” “Appealing.” The words are music to Dean Candis Claiborn’s ears. Washington, according to the U.S. Department of Commerce, is one of the largest employers of engineers per capita, but at the same time ranks 38th in the percentage of bachelor’s degrees granted in science and engineering. Higher education has fallen short, says Olsen. The gap between supply and demand threatens our state’s economy and deprives Washington’s students the chance to be part of the advances that will grow our state.

“Out there are all the maps,” says Olsen. “We have the big ones like Boeing, Paccar, power companies, aerospace suppliers, and civil engineering firms. And many newer areas like software medical technology.

To help fill the need, WSU is recruiting new engineering majors and working to retain them once they’ve declared, says Olsen. Over the projects that have popped up from federal economic stimulus money, a retiring baby boomer generation of power and utility engineers, and a universe of new inventions and applications.

Washington is home to about 650 aerospace-related companies, and almost all of them regularly need new engineers. When you step back and look at the other fields of engineering, says Bob Olsen, WSU associate dean for undergraduate programs, the demand simply grows. He latches off a few of these areas: computers and technology, public works...
years the school has had a problem with losing declared majors to other programs. In 1999, just 33 percent of the students who started out as engineering majors finished as such. Today, though the industry provides solutions to human health issues like access to fresh water, clean air, and safe food. And there are life-saving medical inventions like defibrillators and pacemakers, and even substitutes for bone and tissue.

"And freshman interest in engineering as a major has gone up 45 percent," he says, adding that the school is recruiting more transfer students from the community colleges. The school is also working to lift enrollment limits, increasing the number of seats in the upper division programs available to qualified students. And the state has directed WSU and the University of Washington to each redirect $3.8 million of their budgets into their engineering programs with the goal of producing a total of 380 more engineering degrees a year. For WSU, this means not only bolstering the engineering training in Pullman, but enhancing the joint mechanical engineering program based at Olympic College in Bremerton and offering an engineering degree in Everett at the University Center of North Puget Sound.

But WSU’s instruction is just part of the effort. "We don’t train people for a particular industry," says Olsen. "Our goal is a broadly educated engineer who can then seek into these areas. With the help of companies around the state, through mentorships and programs like the North Puget Sound.

Claiborn. While you have all kinds of examples of lawyers, doctors, mechanics, even forensic scientists on television, you don’t really see engineers, she says, "unless you count MacGyver." And most of today’s students have never even heard of the TV character who engineered his way out of all kinds of jams with everyday items like duct tape and shoelaces.

High schools are sometimes told, "You’re good in math, go into engineering," she says. "But that is not a very compelling conversation." And women who have a talent for math and science are often advised to go into health care. A whole gender is missing out on this career because of a stereotype, says Claiborn, who has her doctorate in chemical engineering.

So she’s wanting to change the conversation. There are plenty of reasons to be an engineer, she says. To help humanity, for example. "A lot of students are attracted to the medical field," she says. "But if you want to save lives, be an engineer. There are all kinds of engineering solutions to human health issues like access to fresh water, clean air, and safe food. And there are life-saving medical inventions like defibrillators and pacemakers, and even substitutes for bone and tissue.

If you want to save the environment, be an engineer, says Claiborn. It’s the engineers who are figuring out how to make use of alternative energy sources and how to be more efficient with the technology already in place.

Even if you want to make money, be an engineer, she says. They are among the top earners of new graduates. Last year a Georgetown University survey of the economic value of college majors showed that the highest median earnings of any major are in engineering ($73,000).

"It’s a question of getting the message out to students," says Claiborn. Angel Hall ’09 discovered engineering offered her both creative satisfaction as well as an opportunity to do good.

Working for Water Integrated Technologies she gets to design machines with hydraulic, pneumatic, electrical, and mechanical applications. She uses a range of tools to build the contraptions her clients need. For an exercise equipment company, she is building a hydraulic unit to test a treadmill. "We have to simulate a runner," she explains, "so the company can test the treadmill under heavy use over a period of time. I can’t wait to see it go up and running." She cracks a smile, suddenly aware of her pun. This job is perfect for her, she says, because she can build an idea and then work with other engineers to make it work. "You need engineers who can sit there and design all day," she says. "But you need other ones who have a big picture and can kind of farm out the different steps that need to be done."

In her spare time, Hall is president of Developing World Technologies, a nonprofit group that funds the creation of new technologies to help unindustrialized communities. The humanitarian effort started when she was at WSU. "I saw this as a senior project on a human power irrigation pump and was hooked," she says. "I wanted to go to Malawi. I wanted to make a project like that."

Her team made a self-priming pumping system and took it to Africa to see if it worked. They toured the countryside, visited an orphanage, and saw small farms planted with lettuce, beans, and tomatoes. And they tried out their pump.

"We found out it didn’t work," says Hall. The team had designed the pump to fit the rear spoke shaft of a standard U.S. bicycle. But the bicycles in Malawi come from all over the world and have many different dimensions. Also, Hall and her partners didn’t realize that almost every bike had a rack over the back tire for transporting things like food and firewood. It got in the way of carrying and using the pump. They quickly refined their prototype, adapted it to fit around the rack, and are now working with a manufacturer to produce the pumps at a price the farmers can afford. The idea is to help farmers irrigate to raise enough food to supply their families and then have some extra to sell at the market. Now the group is funding other similar engineering projects and ideas.
THE FRANK FELLOWS

It took Harold Frank nearly a decade from the time he finished his engineering degree at WSU in 1948 to start his own business with Applied Magnetics, a manufacturer of magnetic recording heads.

Now he is helping today’s young engineers kick-start their own ventures. In 2005, Frank and his wife, Dawn, provided WSU with $1 million to start the Harold Frank Engineering Entrepreneurship Institute.

One component of the institute provides $2 engineering and business majors the chance to be Frank Fellows and take part in a year-long intensive program. They have courses in business planning and prototyping as well as a week in Silicon Valley to visit with entrepreneurs, CEOs, and investors.

Growing up, Cameron Wheeler, a 2008 Frank fellow, never met anyone who had that kind of success. Not hearing the stories of the Bay Area entrepreneurs, Wheeler was convinced that he could find his own good idea and, with some effort and courage, go into business for himself. “There was nothing that was keeping me from being like them.”

The fellows’ initial training is followed by a summer internship at a startup and a year of classes and support to develop and market a project idea. Wheeler took part in a project to create a plastic-free beverage vending machine. Other projects include a news website that uses Twitter’s public stream to compile real-time news, and a human-powered water pump.

SOMETIMES BECOMING AN ENGINEER is a means to another role. Attorney Lewis Lee in Spokane, for example, graduated in electrical engineering but then turned his energies to intellectual property law. His firm, Lee & Hyvies, has clients working in electronics, e-commerce, life sciences, and nanotechnology.

Then there’s Donald Bradley, whose chemical engineering degree got him in the door at the Pacific Northwest National Laboratory and led to his becoming the director of the lab’s Coastal Security Institute in Sequim. He is now a senior technical advisor at the station where part of the work involves detecting pathogens and chemical agents in the ocean and along beaches andreturn.

“Those business people, manage companies, and become CEOs, vice presidents, or presidents,” says Claiborn. They are also at the forefront of new business. A recent Forbes study shows that more engineers are running start-ups than business majors.

THE NEIGHBORHOOD OF NEW IDEAS

That brings us to Cameron Wheeler ‘09. He is just 24 and spends his days in one of the hottest innovation and technology spots in the country—South Lake Union in Seattle. Wheeler’s current venture is ZappBug, a device that uses heat to kill bed bugs.

After hearing the horror stories of people who unwittingly brought bed bugs home in their luggage, he crafted plans for a small heater and a large, collapsible container, then enlisted the help of a tailor to mock up a prototype. Using his engineering training, he calculated the largest possible box he could fill with luggage and other infested items and still reach the necessary heat to kill the bugs. Then he factored in how much insulation he needed to help heat retention. He also designed the “box” with seams and zippers that the blood-feeding bugs couldn’t penetrate.

Wheeler wants the venture to stay small and lean—with low overhead, just two other business partners, and a flexible setup for ordering, assembling, and delivering the ZappBug.

“We live in such a unique time,” he says. “All you need is an idea and the willpower to make it happen.” Because of online marketing and sales, it’s much easier to advertise, sell, and deliver a product. Because of hand-held devices and Google Translate, it’s much easier to connect with suppliers—even in China.

And, says Wheeler, bed bugs are the perfect online focus. “It’s one of those taboo subjects,” he says. People who think they have bed bugs don’t want to tell anyone in person. They’ll first go to their computers for information and solutions. Amazon.com will offer his ZappBug for sale. “It’s like being on the shelf of the biggest store in the world,” he says. It also helps to be around other start-ups. He rents desk space with the founder’s Co-op, a community of early-stage entrepreneurs.

“The only people who are here are here because they want to be,” says Wheeler, gesturing to the room. “Several dozen men and women sit at desks that nearly fill the entire second floor of the building. That guy over there, says Wheeler pointing, is an angel investor who helps small start-ups. Then he points to a team doing search engine optimization to connect people with local solar contractors, and a man who runs a website where people post about their miserable days.

He rents a desk and an address, he says, but he’s getting more. They all willing to share their experience and advice, he says. “Usually, if you want to get something done, somebody here has done it already.”

The neighborhood is full of these people. And when we step outside to say goodbye, we find bustling sidewalks at lunchtime. Every other person is wearing a blue ID tag from Amazon.com. The rest are computer engineers or work in start-ups like Wheeler’s, or medicine, or the biotech businesses that have poured into the neighborhood over the past decade.

There are other spots like this around the state, including the Spokane Intercollegiate Research and Technology Institute and the Coeur d’Alene Innovation Center. These are incubators for the businesses that will drive our state’s economy in the future, says Olsen.

Wireless—biotechnology—medical devices—alternative energy sources—none of these fields existed several decades ago. There are new worlds of ideas yet to come, says Olsen. “We are training students now who may be doing jobs we haven’t even thought of yet.”

We have the stock in place.
IN THE MIDDLE of the last century, a Tennessee preacher-turned-sociologist, Tolbert H. Kennedy, found a relatively untapped pool of doctoral students among the nation’s black college graduates. Between 1944 and 1965, when Washington State University barely had a few dozen black students, he and fellow ex-preacher Wallis Beasley helped produce more black doctors of sociology than all but two schools, the University of Chicago and Ohio State.

Among them was a young man who went from the hardscrabble coal country of western Pennsylvania to graduate first in his class at Wilberforce, the oldest black college in the country, and get a master’s degree at Bowling Green University. Casting about to study for his doctorate, he fielded fellowship offers from nearly half a dozen universities.

Kennedy, then the head of the Division of Social Sciences, told the student over the phone what it was like at WSU and made it clear that he took pride in having so many outstanding black graduate students. He followed up with letters and calls offering to answer any questions.

“I was so impressed with that attention that I decided to go there,” recalls William Julius Wilson, sitting in one of three offices he keeps at Harvard University. “You have to understand, I didn’t get that kind of attention at the other universities.”

From WSU, Wilson went on to positions at the University of Massachusetts at Amherst, the urban sociology powerhouse University of Chicago, then the “dream team” of Henry Louis Gates Jr. at Harvard, with positions in the Kennedy School and departments of sociology and African and African American studies.

He is now one of the nation’s most accomplished and looked-to analysts of race, inequality, and poverty, a MacArthur “genius” award recipient and, counting this year’s accolade at Yale University, holder of 45 honorary degrees. Time magazine in 1996 named him one of America’s 25 most influential people. President Bill Clinton said his books “made me see race and poverty and the problems of the inner city in a different light.” He is only the second sociologist to receive the National Medal of Science, the highest scientific award in the United States.

He is at times bewildered by his success. His father died young, leaving Wilson’s mother to pull six kids out of poverty. All ended up going to college and earning at least a bachelor’s degree. He is largely a product of public education but his top rank of University Professor—with a capital “U”—typically goes to products of elite prep schools and Ivy League colleges.

In some ways he typifies the wellest in academic celebrity, with a button-downed presence and books long on analysis. But he is also an intellectual warrior, spearing several orthodoxies of his fellow liberals, stoking the ire of fellow black sociologists, and planting several flags against conservatives in battles over race and public policy. One of his books provided the socioeconomic backdrop for a season of the HBO series The Wire.

He has a true rags-to-riches story. He worked hard to make it happen and is unashamedly proud after several decades of personal doubt. But he will just as soon tell you that his life and life’s work illustrate that his version of the American dream is a statistical outlier, a beneficiary of opportunities beyond the reach of most poor African Americans.

T.H. Kennedy and WSU are among those opportunities. It’s easy to overstate that in a university magazine, and maybe Wilson let himself get carried away over several interviews and occasionally wistful memories of living in Pullman. But let the record reflect that more than once, with no prompting at all, he would say something like this:

“Going to WSU was the greatest decision I ever made in my life.”
IN 1960, the year before Wilson's arrival, Pullman had fewer than 13,000 residents, of which about 7,000 were WSU students. Seventeen residents were listed as “Negro.” At the time, Pullman was “a statistical category of the day,” said Wilson.

Wilson grew up little. Most universities were overwhelmingly white, and he was ill at ease among the black majority in his fellow graduate students and felt welcomed by the faculty. Pullman was similar to his rural hometown of Blairstown, Pennsylvania, with a “beautiful place,” he says, “and the image of walking in downtown Pullman and looking up and seeing the campus up on the hill was fascinating.” And I loved it. There was just great fishing down on the Snake River.

He recalls no incidents of racism on campus and only one “paternalistic racial experience,” in a bar downtown. Civil rights protests were on the horizon, but Wilson couldn’t imagine that he was actually moving up in the world. This was going unnoticed in his department, he feels so good about choosing WSU.

At graduation, he was honored as the top graduate student in the sociology department. It was icing on the cake and one of several reasons he developed the confidence and that’s where I really realized that I had a lot to offer. Washington State informs the way that I analyze and teach my students.”

The American Sociological Association gave the book its Sydney Award for giving “aid and comfort” to those who would “blame poverty on poor people.” The book became the most cited academic work of 1987 by the pre-eminent public intellectual of the African American social condition. That impact extended far beyond the confines of the academic community and elevated Wilson to the status of a widely read public scholar.

MURRAY ALSO INSPIRED Wilson to, once again, double down. He assembled a massive $2.5 million research project of 10 and, with a team of five co-investigators, he led a research project of inner-city Chicago neighborhoods, which led to the book, Losing Ground: American Social Policy, 1950-1980.

The book, he writes, “provides the ammunition for debate about the role of race in poverty, and, more recently, the Occupy Movement, has shifted the policy debate away from economic growth to questions of inequality.”

Wilson says some cities have used The Truly Disadvantaged in support of initial attempts like “bottom-up housing and employment initiatives that target projects into mixed-income developments. Under the Obama administration, the program has been modified to include funding for early childhood education, employment, safety, and transportation.”


He was interested in the idea that poverty has a structural cause, that the disappearance of work provided a foundation for the mounting crime, broken families, and welfare of inner-city ghetto neighborhoods. In the 1980s, studies on inner-city neighborhoods revealed a life of their own, “passed,” he writes, “from generation to generation.”

Other sociologists had long steered clear of cultural analysis, fearing that it was “bad sociology.” Wilson found the literature of racial and ethnic relations, Wilson found a handful of good works, but most were ideologically driven and short on theory—little stuff. He undertook a comparative analysis of South African and Brazilian black neighborhoods. In the city of Salvador, he found a high degree of prosperity. But as industries went to the suburbs, if not overseas, “the economic growth that happened in the city, the middle class, the people who were white, the middle class, the (people) who were black, the (people) who were black.”

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That’s where he’s at. Wilson says some cities have used The Truly Disadvantaged in support of initial attempts like “bottom-up housing and employment initiatives that target projects into mixed-income developments. Under the Obama administration, the program has been modified to include funding for early childhood education, employment, safety, and transportation.”


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WILSON WAS 12 YEARS OLD, the oldest of his five siblings, when his father died.

It was a devastating experience, “he says. “And my mother told me, ‘Bill, you have to take on greater responsibility. You have to be the man of the house. I’m 12 years old.’”

At first, he was too crushed. A classmate years later reminded him that he seemed to have lost his spirit. But he did step up. He worked in a bowling alley, setting pins, cleaning, and giving the money to his mother, who worked as a housekeeper. They were on relief for a spell and often hungry.

At night his mother would gather the kids around a table to do their homework while she would cook.

Despite that, he was overwhelmingly impoverished, it never occurred to us that we weren’t going to get a college education,” says Wilson.

To some extent, his experience is echoed by the families in Good Kids, Bad Kids: a study of successful adolescents who overcome the overwhelming odds of their high-risk areas. The study, on which Wilson was a junior author, found a major factor in the kids’ success was the “mediating variable” of strong family units.

But there are some ways in which Wilson’s experience is hard, if not impossible, for today’s black poor to replicate. Yes, Wilson had personal visits, gave him books, and talked constantly about “ambition and creativity.” His church gave him a college scholarship. At Wilberforce, he earned two master’s degrees and in turn helped finance Wilson’s college tuition. She took him to New York museums and libraries during summer breaks, gave him books, and talked constantly about “ambition and creativity.”

“His church gave him a college scholarship. At Wilberforce, he earned two master’s degrees and in turn helped finance Wilson’s college tuition. She took him to New York museums and libraries during summer breaks, gave him books, and talked constantly about “ambition and creativity.”

“He is an impressive individual, but it’s increasingly difficult because we’re so incredibly polarized right now that you sort of want to throw up your hands in despair and say that nothing can be done. But if you swallow in pessimism you just don’t do anything. Prospects don’t look good right now. We just have to hang in there. We just have to keep fighting. We can’t succumb.”

Wilson caught the eye of the University of Chicago when the chairman of its sociology department, Morris Janowitz, saw him give a presentation in Ecology that was a case of being in the right place at the right time, followed by what Wilson calls “affirmative opportunity.” At the time, a scholar needed to have a book published to be appointed a Chicago associate professor with tenure. Janowitz recommended Wilson’s appointment based on the unpublished manuscript for Power, Racism and Privilege.
A lovely little butterfly, generally quite rare, Lucia's Blue is partial to Cowiche Canyon. In some years, James has in a few hours along the trail counted several hundred adults, which prevail in the canyon for four to six weeks starting in early April.

"You've got to go a long ways to find another population of Lucia's Blues," says James. The habitat is unusual for the Lucia's Blue, as it's usually found in the mountains.

The key, says James, is the red osier dogwood. "They're recently emerged. Once they've mated, the females will lay eggs on the red osier dogwood. They lay them on the flower buds and young leaves."

The Lucia's Blues develop very rapidly. Once the caterpillars are well-fed on red osier dogwood, they turn into a chrysalis, the stage in which they spend the rest of the summer and winter.

"It was supposed to be a retirement project," wife and fellow entomologist Tanya James says of Life Histories. Although the time commitment on top of his "day job" in Province was tremendous, Tanya welcomed the enterprise. She loves to hike; she says she does not dislike orange wedges to their daughters. But David needs a purpose, just hiking to the top is not enough. Chasing butterflies is.

Lucia's Blue was only recently described as a species, so recently that Robert Pyle's definitive Butterflies of Cascadia, published in 2004, lists it as a subspecies. But of insects in general, writes Pyle, "Few habitats in season are without their butterflies."

"The Lucia's Blues are not quite as delicate as they look. A Cowiche Canyon visitor that butterflies fly to is an adult ventral view. A delusion is exhaustively unique. Although other books about butterfly life histories exist, none quite matches its thoroughness. As Pyle writes in his foreword to Life Histories, "In the whole world, no other work as unusually comprehensive companions in their coverage of the region. Life Histories is an exhaustively unique. Although other books about butterfly life histories exist, none quite matches its thoroughness."

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"But what distinguishes Life Histories from general field guides and most butterfly books in general is that it treats the whole life of the butterfly. After all, the common image of the butterfly, the beautifully patterned adult, represents only a fraction of the insect's overall life. Once they have counted and bred, butterflies lay eggs that hatch into larvae, or caterpillars. The caterpillars feed, grow, and shed a number of times before becoming chrysalides, or pupae. The adult butterflies emerge from the chrysalis and emerge. The portion spent in each stage varies by species."

But information on the entire life history of many butterflies of many geographical ranges is sorely lacking. Fortunately, Cascadia is now among these deficient ranges.

**LUCIA'S BLUE** (*Celastrina lucia*)

*Opposite, left,* Adult Mourning Cloak dorsal view with eggs, larval stages 1 & 4, pupa, adult ventral view. *Opposite, right,* Adult Coronis Fritillary ventral view with eggs, larval stages 1 & 5, pupa, adult dorsal view.

*Above,* Lucia's Blue at larval stage 3 with egg, larval stage 4, pupa, adult male ventral and dorsal views.

*Left,* David James (right) tries to convince a Cowiche Canyon visitor that butterflies are not quite as delicate as they look.

"Almost there," says James at the Mourning Cloak stirs. "Sometimes they shiver."

And off it goes.
**BECKER’S WHITE** (*Pontia beckerii*)  
Of the thousands of known species, the only butterfly that causes economic damage is the Cabbage White (*Pieris rapae*). Gardeners here today might indeed scorn the white butterflies that flit through the warm canyon. A closer look, however, would change their mood. The difference, besides diet, is the underside of their wings.  

“The whites you see here are Becker’s Whites,” James tells a new group. Whereas the Cabbage White’s underside is yellow, the Becker’s White’s is a beautiful green.  

Even with the James family’s purposeful hikes, the bulk of the information for *Life Histories* was accomplished in a more controlled setting.  

James tells me separately the same as his wife, that this was originally a long-considered project that would be finished sometime after “retirement.” His major work is directed toward biological control in vineyards.  

But then he caught wind that David Nunnallee in western Washington was also documenting butterfly life histories.  

“Once we got together, there was a synergy,” says James. “It became more of an achievable thing to do in a shorter period of time.”  

Although adult butterflies were collected in their habitat, and the finished book now provides an identification guide for whatever stage one might stumble across, one does not simply go out and track down eggs, caterpillar, chrysalis, and adult for each of the 158 species of butterflies. For most of those species, that work required raising them in the lab.  

On the one hand, such an endeavor was nothing new for James. He started raising butterflies as an aspiring eight-year-old lepidopterist. But the reality of scientifically documenting each stage of these butterflies’ life histories was daunting.  

“It was a phenomenal amount of work,” he says. Many of the species had never been reared before, and each species required a different way of getting them to lay eggs.  

Their desire to produce such an exhaustive study required that James and Nunnallee raise each species multiple times. “There was so much variation,” he says. Variation, that is, within an individual species. For example, the color of the larvae might vary depending on the host plants they feed on. Many of the entries in *Life Histories* include as many as six photographs of larvae in order to show that variation.  

Each species, says James, represented a separate research project. But the final result is a wealth of biological and ecological knowledge that simply didn’t exist before their work.  

The book has produced lots of “suggestions for further research,” says James with a smile.  

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**MONARCH** (*Danaus plexippus*)  
One butterfly that does not make a showing in Cowiche Canyon today is the Monarch, probably the best-known butterfly in the world. It is actually much too early for Monarchs, and even later in the season it is not common. According to *Life Histories*, most Monarchs that occur in Cascadia probably originate in California. This and the longer migration of Monarchs between Canada and Mexico are threatened by decreasing habitat, particularly stands of showy and narrow-leafed milkweed, their host plants, due to agriculture and urban expansion.  

Efforts to conserve appropriate habitat depend on a better knowledge of their migration routes. Although eastern Monarch migrations are fairly well understood, our understanding of western migration is sketchy. Although a recent study analyzed data on host plant availability and climate and predicted origins of migrating monarchs, it still does not clarify routes.  

James is proposing to answer fundamental questions about western Monarch migration by enlisting prisoners at the Washington State Penitentiary in Walla Walla.  

To conduct a rigorous study, which will take years, James will need tens of thousands of monarchs. Raising them himself is simply not feasible.  

As part of the Sustainable Prisons project, which has been successful in western Washington in connecting prisoners with nature, officials at the penitentiary contacted James about possible prisoner participation in his work. According to James, prisoners have “reared endangered species more effectively than experts.”  

Starting this summer, prisoners at Walla Walla will begin raising the thousands of Monarchs necessary for James’s study. Once the butterflies have reproduced and metamorphosed, they will be tagged, transported to various sites near the California-Oregon border, and released.

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**IN WILDNESS IS THE PRESERVATION...**

“We cannot protect what we do not understand,” write Nunnallee and James in their introduction. Their book has contributed enormously to our understanding of the full lives of butterflies and, it is hoped, will contribute to the protection of these wonderful animals.

The great British naturalist Sir David Attenborough has called *Life Histories* “magisterial,” a label that suggests much more than a collection of data and observations. A richly unique combination of traditional natural history and obsessive data-driven science, the book is, finally, beautiful—both in itself, for it is wonderfully photographed and written, and for showing us the enormously complex beauty of our Cascadian butterflies.

To find out the one species of butterfly elusive to *Life Histories*, *The Butterfly of Cascadia*, visit wsm.wsu.edu/butterflies/Cascadia-butterflies.
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- Savings on Cougar gear at The Bookie, Crimson & Gray, and the Washington State Connections store
- Special rates at many preferred hotels and car rental agencies
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And many more…

WSM Fall 2012

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by Hansel</p>
Finally, a third benefactor, Alma de Bretteville Spreckels, who died in 1948, was always an eccentric character in a landscape filled with barns, wood-frame houses, and acres of ranchland. “I would go there,” she said. “It had a special attraction to me, not only for the collection and the building, but the site.”

Fond of the Columbia River with views to Mount Hood and up and down the gorge, the 5,000-acre property is vast and stunning. Such was the attraction that after starting his career in Portland, Callan and his wife WSU 16 square feet and provide the museum a modernized, energy-efficient wing named for patterns Mary and Bruce Stevenson.

Several GBD colleagues worked on the project with Callan, including Dick Kirkshuch who’s The wing is built into the rock on the hillside beneath the museum, protected from the wind and with deep overhangs that allow serious study of nature. The museum was recognized for its leadership of WSU’s Visual Arts Center.

Ken Warren (19 VA, MA, PhD, and EdD) is a forensic architect and past-president of the American Institute for the Conservation of Historic Artifacts. He has been a member of the faculty at the University of Pennsylvania and has consulted on over 500 projects around the world. Warren has been the recipient of numerous awards, including the National Medal of Arts and the National Trust for Historic Preservation’s Award of Merit. He is a fellow of the American Academy of Arts and Sciences.

John Neff (19 VA, MA, PhD, and EdD) is the director of marketing and business development at Kenworth General. He has 25 years of experience in the home building industry, including stints at Batteau and the National Home Builders Association. Neff is a member of the National Association of Home Builders and a past president of the Washington State Homebuilders Association.

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Yessenia Picha '12

by Linda Weisford

Yessenia Picha comes from a family of alpaca owners, or alpaca ranchers. She grew up around the curious, long-lashed creatures raised mostly for the fiber of their soft, durable fleece. With 80 percent of the world’s alpaca population residing in Peru, it’s no surprise that after completing her veterinary degree at WSU, Ms. Picha will return to her country, where she worked for an agricultural social services agency in the area of generic veterinary services.

While the work was rewarding, “I felt there were important gaps in my knowledge,” says Picha. She knew she could obtain more rigorous veterinary training in the United States. Also, in Peru, veterinary medicine is considered a man’s job, especially when it comes to working with large animals like alpacas and cattle. She says, “I came to see that I would have to study harder and work harder to show that I can make a difference.”

Five years ago Ms. Picha came to Pullman for a three-month visit to study under Ahmed Tibary, a professor in the College of Veterinary Medicine who specializes in animal reproduction and is known around the world as her work with camels, mammoths and other members of the biological family that includes camels, alpacas, and llamas. His collaborative work with these species is significant because, “These animals need not show them much affection. They ignore you and spit on us,” she says. In Pullman, she found a different experience. “Here, they are kind and smart,” she says. “I think because they are treated with more affection.”

Recognizing Picha’s desire to continue her education, Mudasitq Memon, an associate professor of comparative animal reproduction at WSU, encouraged her to apply for a Fulbright scholarship so she could return to WSU and complete her master’s degree. Not only did the competitive international program award her a grant for her studies, it provided for intensive English language training.

“When she first got here, she spoke in broken English and seemed unsure of herself,” says Memon, himself a Fulbright scholar who now serves as WSU’s Fulbright Ambassador. “But she was very determined, and worked hard. During her two years here, she learned, grew and gained confidence. And yet, she never lost sight of where she came from and her commitment to contribute what she learns when she goes back.”

Late this summer Picha returns to Cuzco as one of the first, if not the first woman veterinarian in Peru to earn a veterinary master’s degree in the United States.

Picha hopes to work mainly with alpacas and cattle and would like to eventually return to school and earn her doctorate. Someday she hopes to join the faculty at a university. “I hope to teach my students to be critical thinkers. Before I didn’t question what I learned from my books or my professors,” she says. “Here, I was encouraged to ask, ‘Why?’”

And whenever she sees someone wrestling with alpacas—the economic mainstay of many Peruvian villages—she’ll draw on herPullman experiences. “I’ll tell them, alpacas can help you,” she says. “You don’t need to have a fight with them. Here, let me show you...”
Marcus called me with the bad news,” he says. “He said, ‘There’s something very different from other campuses, Capers says. But his journey to Pullman was almost cut short when his scholarship was revoked. "Coach Bennett called me with the bad news," he says. “The scholarship he had to offer had just been given to another player.”

The WSU faithful love to tell the story of how player Taylor Rochestie generously gave up his own scholarship at the beginning of his senior season, relinquishing it for Capers. The two had met during Capers’ recruiting visit to Pullman and had remained in contact. Capers said. “To, in some small way, give back the opportunity to experience the university, interact with other students and faculty, and develop that critically important network.”

“We helped him grow to love Pullman,” says Capers. “...everything, that is, except the snow. For a Florida guy like me, the snow has been a tough adjustment.”

Capers found himself calling Rodriguez almost daily. There was that difficult day when he learned head basketball coach Tony Bennett was leaving WSU. Capers considered transferring, but Rodriguez helped him reason his way through it. “There are certain things you can’t tell your teammates, or that you don’t really want to tell your friends,” says Capers. “My mentor talked with me as ‘Marcus the student,’ not ‘Marcus the athlete. It made all the difference.”

Capers closed his senior year at WSU amidst something of a whirlwind. The team played into the championship round of the CBI Basketball Tournament, extending their season into the final days of March. For full-time jobs, and sometimes overwhelming, fortunately, he was connected with a volunteer mentor. Damien “Gabby” Rodriguez said Capers to experience the university, interact with other students and faculty, and develop that critically important network.”

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**WSU Alumni Association News**

**The Future's So Bright:**

New WSU President Lisa Steele Habley ’99

by Malia Jacobson ’00, ’04 | New WSU president Lisa Steele Habley ’99 has a sunny outlook, and it’s no wonder.

She makes her home in Tucson, Arizona, where the sun shines nearly year round.

It’s a long way—both geographically and environmentally—from the cool, damp climate of her native Federal Way or the icy winters of Pullman, her college home. But the distance hasn’t dimmed her enthusiasm for her alma mater. “I’m more excited and passionate about WSU than I was when I was in school,” she says.

As an undergraduate communication student, she wasn’t involved with the Alumni Association. It wasn’t until she relocated to Arizona in 1999 that the hunchy mom grad recognized the power of strong alumni bonds. At local WSU alumni events, she discovered a home away from home in the company of her fellow desert-dwelling Cougars.

Soon she was lending a hand. By 2006 she’d taken a leadership role in the Arizona and Southern Nevada Chapter. During her four-year stint as chapter president she worked tirelessly to engage more Cougars, increasing the number of events five-fold, recruiting six additional chapter representatives to help grow membership, and founding the popular Cougars at Spring Training Event in Peoria, Arizona.

“My favorite part of leading my local chapter was hands-on community involvement,” she says. As president of the WSUAA, she’s serve a much larger community, a factor that boosts the challenges along with the rewards. “Volunteering for my local chapter helped me meet my neighbors, essentially,” she says. “I learned so much about my community and it was satisfying to help build and strengthen the Cougar family. Now, I’m looking forward to helping connect more Cougars nationwide.”

When she’s not working as a technical support engineer for Raytheon Missile Systems, Steele Habley still enjoys the Tucson sunshines at local WSU events with husband Jeff Habley ’99 and their children Mason and Isla. Her presidential duties mean she’ll spend more time in Pullman and Seattle this year engaging alumni in support of the University’s upsides. “Outreach is key to the success of any organization, especially university,” she says. “I’m looking forward to helping keep alumni connected and helping out-of-state alumni feel like part of the team.”

To join and learn more about WSUAA, visit alumni.wsu.edu.

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A strong and sustainable economy for the state of Washington depends upon Washington State University and all of higher education.

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Of Little Comfort: War Widows, Fallen Soldiers, and the Remaking of the Nation after the Great War by Erika Kohlmann

The book takes a deep look at the opinions and experiences and sometimes engaged in cross-border activities like providing aid to former combatants. The book tells a deep look at the opinions or widows themselves, through their own words, and puts those experiences and struggles into the context of national efforts to define the war for both vanished and victorious countries, such as using ceremonial mourning for soldiers and the plight of war widows to reinforce their national identity.

Finding the River by Jeff Crane ’04 PhD, ’98 OREGON STATE UNIVERSITY 2011 :: Review by Hanns-Michael Sudermann :: In 1992, President George H. W. Bush signed into law the Elwha Act, which called for the removal of two hydroelectric dams from the 45-mile river that flows from Washington’s Olympic Range to the Strait of Juan de Fuca. Over the past 10 years, the Elwha and Glines Canyon dams have been removed and the decades of sediment behind them are being managed in a way to limit damage to the river downstream.

Just in time comes Finding the River, the story of the river from its geological formation to the removal of the dams and the efforts to restore the salmon and trout that once dominated the waterway. Crane, an associate professor of history at Sam Houston State University, not only gives a rich history of the river but details the efforts of environmentalists and Elwha Klallam Indians to draw attention to the damage they caused.

Crane takes vivid descriptions of the landscape and an understanding of the natural, cultural, and political forces affecting the development, use, and removal of the dams. He brings up interesting details, including the blowout in 1912 during the construction of the first dam. The water surged 30 feet. Ranking dogs saved the Lower Elwha Klallam Indians from drowning.

Crane also details the early and failed efforts to transport the salmon past the dams, including a fish trap and elevator to carry fish to the river above, and later the construction of a fish hatchery below one of the dams.

In his conclusion Crane suggests the restoration of the Elwha River could open the discussion of removing other dams in the United States. He even goes on to name a few. Finding the River is what Crane hopes the native salmon will do, but he also hopes that others will find it as landmark in our national environment and for example for efforts to restore other rivers around the country.

The Republic of Nature: An Environmental History of the United States by Mark Fiege ’85 M.A., OREGON STATE UNIVERSITY 2011 :: Review by Tim Steury :: The Republic of Nature brings up interesting examples of the traits which favor that understanding of a multitude of things, including life on the reservation, her divorce, her relationship with her two sons, and her own heritage and identity. Fiege teaches composition and technical and professional writing in the WSU English department.

As historian Erika Kohlmann writes, the widows didn’t always cooperate with the national goal. In Berlin, more than 10,000 widows marched in protest in 1918 demanding compensation for their losses. Many widows publicly and privately criticized their governments’ response to the death of soldiers. Economic hardship contrasted with ideas of whose widows should be in the aftermath of the Great War—vanquished and victorious countries, such as using ceremonial mourning for soldiers and the plight of war widows to reinforce their national identity.

The traditional roles of widows in those societies faced a massive shift as the definitions and structure of marriage and gender were transforming. Even the definitions and structure of marriage and gender were transforming. Even the definitions and structure of marriage and gender were transforming. Even the definitions and structure of marriage and gender were transforming.

Kohlmann uses letters, diaries, popular magazine articles, and correspondence between widows and their governments in the United States and Germany to examine the way war widows coped with their roles after World War I. She writes about the war widows of France and England, and then looks at the transnational aspects of widowhood, where women who lost their soldier-husbands compared experiences and sometimes engaged in cross-border activities like providing aid to former combatants.

The book tells a deep look at the opinions of widows themselves, through their own words, and puts those experiences and struggles into the context of national efforts to define the war for both vanished and victorious countries, such as using ceremonial mourning for soldiers and the plight of war widows to reinforce their national identity.
Mural, mural, on the wall

Pine Street Plaza Mural, 2009-2012
Artwork by Patrick Siler
Pullman, Washington

Artist and WSU fine arts faculty member for 32 years, Patrick Siler’s outdoor wall mural “Pine Street Plaza Mural” holds a prominent position in downtown Pullman. He completes the third and final panel this summer.

The WSU Museum of Art presented an exhibition this summer—Curator’s Choice: Patrick Siler Mural—showcasing the sketches and finished drawings that were a part of the project.

For more information on the artist and project, see article “On the wall” on page 47.

Watch a video of Siler and his work on the mural at wsm.wsu.edu/extra/Patrick-Siler

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ALBERT EINSTEIN (1879-1955)
Considered the "father of modern physics," his name is synonymous with genius.

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