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Winter19
vol19no1

Washington State MAGAZINE

THE NEW WEST

Winter19
vol19no1

Features

UPfront

COVER: WILD HORSE RENEWABLE ENERGY CENTER, KITTITAS COUNTY (COURTESY PUGET SOUND ENERGY) **LEFT:** WILD HORSE WIND FARM ACROSS THE COLUMBIA RIVER FROM FRENCHMAN COULEE (PHOTO JIM MEYERS)

"LET'ER BUCK" SCULPTURE BY AUSTIN BARTON (STAFF PHOTO)

thematics

Departments

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WASHINGTON STATE HAS A

Shortage of doctors in rural counties.

In a game-changing move, Premera Blue Cross is turning Cougs into doctors with a $5.5 million grant to Washington State University's Elson S. Floyd College of Medicine. The money will pay for new graduate medical education programs in rural areas of Eastern Washington.

These programs will help Washington keep students who are passionate about serving rural communities right here where they're needed most.

Premera is proud to partner with WSU.
Go Cougs!

PREMERA BLUE CROSS
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Andrea Castillo ('20), Elementary Education, WSU Vancouver

Generation Coug

After you turn 70½, you're required to withdraw from your IRA annually. Transferring those funds directly to the WSU Foundation reduces what you would pay in income tax while supporting civic-minded students like Andrea Castillo. "Instead of focusing on how I'm going to pay for textbooks and fees," she said, "your support lets me focus on what I love—being involved on campus and helping other students at WSU Vancouver succeed."

Learn more about how you can support students through planned gifts: *foundation.wsu.edu/ira*

WASHINGTON STATE UNIVERSITY FOUNDATION

FIRSTwords

The new West. When we speak of "The West," what are we saying? There's an old West. Isolated. Rugged. A hostile land to be tamed. Clint Eastwood scowling at the end of a dusty road, alone.

There's a new West: coffee, airplanes, tech. Microsoft, Amazon, Boeing, server farms in Quincy, and GPS-guided combines on the Palouse hills.

But there's also a new old West, where we're cultivating a deeper understanding of ancient traditions and more recent Western history, building new businesses around old agricultural lifestyles, and reinventing the old cowboy tropes.

At the 109-year-old Pendleton Roundup in Oregon, for example, a Washington State University alumni family and colleagues don't just ride broncos and live the cowboy life, they fight the huge food insecurity problem in their state through collaboration with Portland. Bridging that rural-urban divide shows what can be accomplished, not in an isolated West, but in an interconnected community ready to tackle big issues.

Of course, the West has been home to people for thousands of years, and WSU researchers, alumni, and staff work to revitalize Native American languages, support Native students, and understand traditions of medicine. At WSU Health Sciences Spokane, they're making concerted efforts to increase the number of Native health-care practitioners, while integrating culturally appropriate Native medicine with Western healthcare. It comes at a crucial time, particularly in rural areas, where Native Americans face severe health disparities.

WSU English Professor Kim Christen also coordinates with Native American tribes to revitalize their languages. Their efforts represent more than language classes and curricula—the Native languages themselves are inextricably tied to the land.

Small farms have also been part of the Western landscape for hundreds of years. Thanks to an energetic WSU Extension member, many struggling farms are finding new life through agritourism.

Visions of the old West inspired artist Don Weller '60 to paint cowboys and horses. It's a return for him from the new West—Weller was a graphic designer in Los Angeles for decades, and his illustration of Elton John appeared on the cover of *Time* magazine, among other high-profile projects.

The new West that many of us share continues to evolve and become even more intriguing—just take a look at WSU equestrian coach Laura Moore '08 winning a mechanical bull riding contest, pushing back on the old stereotypes of the West.

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TALKback

Some apples for a bird

I got a chuckle when I read the story of the Tukey Orchard. When I was a sophomore at WSU a good friend snuck into the orchard and stole enough apples for me to make an apple pie. It was delicious! As thanks for the pie he went bird hunting and brought home a chukar, which he roasted for dinner. Only problem was that he hadn't removed all the birdshot… So many great memories of my years at WAZZU!

EILEEN GLAHOLT '65 HISTORY
Kaneohe, Hawaii

Sign up for the monthly Washington State Magazine *email newsletter to get previews of stories, podcasts, videos, and more bonus features:* **magazine.wsu.edu/email**.

COUGtalk

Donations to WSU athletics are up, but…large competitive gap remains

ESPN's College GameDay in Pullman last season was a national advertisement showcasing Washington State University and one of the most loyal and passionate fan bases in the country.

When our football team competes on a national stage and basketball earns a trip to March Madness, applications for enrollment spike, it raises the profile for the entire University, and increased donations follow.

For these very reasons it is now time for WSU alumni and friends to step up their financial support for WSU athletics so we can compete on a consistent basis.

Some very good news

• WSU Athletics raised $15.1 million in the fiscal year ending June 30. This is the second-highest yearly total in history.

• Of that total, the Cougar Athletic Fund (CAF)—which supports student-athlete scholarships—accounted for a record $8.6 million. This is an increase of $900,000 from the prior year and a $2.15 million increase from 2017!

• 1,516 new donors joined the CAF in FY19. Historical evidence shows that new donors increase their giving over time which bodes well for the future.

As Cougar fans we have a lot of work to do.

WSU ranks 12th in the Pac-12 in donations to athletics. To put this into perspective, Oregon State ranks 11th and raised $10.8 million more than WSU in the last fiscal year. Further, Oregon State had a much larger number of major donors ($25,000 or more) than did WSU.

I challenge existing donors to step it up and new donors to join the CAF. The record $8.6 million to the CAF is a good start, but that number should be much higher given the size and wealth of our alumni base, the strong economy in the state of Washington, and the passion of our fan base. Based on donations at peer institutions (Oregon State included), annual donations to the Cougar Athletic Fund should be $15 million.

To jumpstart this ascent I am going to double my donations to WSU Athletics to $150,000 this calendar year, and I ask all current donors to increase their support. If you are not a member of the CAF, I ask that you join now. This effort will take all WSU alumni and friends!

A major priority for WSU Athletics is the new **Indoor Practice Facility** (IPF) that will be used by all 17 sports teams. Every Power 5 university in the northern United States has such a facility, even non-Power 5 Boise State University and Utah State University.

The cost for the IPF is $21 million. Gifts can be pledged over a number of years. For example, a major gift of $100,000 or more can be pledged over five years. This includes donations with appreciated assets such as stocks and real estate.

Let's do this!

Now is the time to take WSU athletics to the next level so please start now.

To increase your donation, join the CAF, or contribute to the IPF, please contact Adam Ganders, Cougar Athletic Fund, at 509-335-0218 or aganders@wsu.edu.

There is no doubt in my mind we will get to our rightful place in the Pac-12.

Go Cougs!

GLENN OSTERHOUT '82 BUSI.
Bellevue

Glenn Osterhout is on the Board of Directors of the WSU Foundation, chairman and cofounder of CougsFirst!, and a periodic columnist for Cougfan.com.

Wanda B, BECU Member owner

PASSION MEETS NOT-FOR-PROFIT

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An advocate for all students

Fourth-year pharmacy student **Johanna Pantig** has taken classes—and been a leader and volunteer—on three WSU campuses. Now, as the University's **newly appointed Student Regent,** she's a voice for all students.

"You can get an education at any college, but the experiences and connections WSU has to offer are what made the difference for me. Once a Coug, always a Coug."

wsu.edu

PULLMAN VANCOUVER TRI-CITIES SPOKANE EVERETT GLOBAL

WASHINGTON STATE UNIVERSITY

Buckin' hunger

From left: Luke Hansell, TJ Hansell, Kenzie Hansell, Fred Ziari, and Casey Beard. *Staff photo*

BY REBECCA PHILLIPS

The September sun is hot, the music's loud, and fans holler as bareback broncs tear up the grass trying to toss some of the nation's best cowboys. Charging out of red, blue, yellow, and green bucking chutes, the competitors in northeast Oregon's 109th Pendleton Round-Up are taking part in one of the world's most famous and colorful rodeos.

Set in a wide valley pressed up against the Blue Mountain foothills, the small city of Pendleton has hosted the Round-Up since 1910, a rodeo voted best in the United States for four years running.

Much of the thanks goes to the 1,100 volunteers, including a group of highly engaged Cougar alumni, whose teamwork and hospitality make the Round-Up and Happy Canyon Indian Pageant and Wild West Show a dazzling display of Americana.

The notable achievement is also based on the Round-Up's generous community spirit and focus on animal and human welfare.

Throughout the week, certain days are dedicated to charitable causes. For the last three years, opening day at the Round-Up has been christened Farmers Ending Hunger Day to help promote awareness of food insecurity in Oregon.

Farmers Ending Hunger is a nonprofit organization founded in 2006 by Oregon entrepreneur and former Washington State University faculty researcher Fred Ziari.

Ziari also happened to be friends with Casey Beard ('71 Poli. Sci.), who served with General Norman Schwarzkopf during Operation Desert Storm. Beard was hired as the Round-Up's first general manager in 2014, a time of rapid growth, upgrades, and increased commitment to the community.

"We were looking for ways to contribute and Farmers Ending Hunger was a good organization," Beard says. "I approached the boards and they agreed to make it an official charity."

The nonprofit aims to increase the amount of high-quality food available for local communities through a partnership of farmers, food producers, the Oregon Food Bank, and the public. Member farms regularly donate grain, livestock, or fresh and frozen produce. Others give food or chip in cash to "adopt" acres of dedicated farmland.

A $250 donation to the Adopt-an-Acre program, for example, will provide a serving of pancakes for 2,300 families of four. So far, the Pendleton Round-Up has adopted twenty acres of farmland to help fight hunger.

"It's been a great partnership," says Beard, who retired in 2019. "Farmers and ranchers who donate food do this out of a tradition of stewardship of the land and community and of course, that's a WSU virtue. They aren't doing it for the publicity. They do it because it's the right thing to do."

Ziari, whose family farmed in northern Iran for over a thousand years, says he became aware in 2006 that Oregon was number one in hunger in the United States and had been in that position for decades.

"It came as a big surprise to me that we live in one of the richest agricultural areas in the world and have 300,000 citizens in Oregon who have to use food banks just to eat, and 30 percent are children," he says.

"The problem with hunger is it's hidden. No one associates Oregon with hunger and Washington is not that far behind."

According to the Oregon Food Bank, 14.6 percent of state citizens lack access to a sufficient quantity of affordable, nutritious food. Relatively high costs of rent, food, gas, and utilities combined with long-term unemployment or persistent underemployment are cited as causes.

"Once I learned about that, I started meeting with farmer friends in the Hermiston area and asked if they knew this," says Ziari. "Most said no. Then, I asked if they'd be willing to donate a percentage of their farming production for hunger relief—purposely plant food that can be used to eliminate hunger. Virtually all of them said yes."

The first farmer Ziari reached out to was Tyler Hansell ('70 Ani. Sci.). Though Tyler has since passed on, all five of his children now actively support Farmers Ending Hunger. The three brothers, TJ ('01 History), Kenzie ('04 Ag.), and Luke ('09 Ag. Busi.) donate beef, wheat, and cash from their farms.

Kenzie is on the Farmers Ending Hunger board of directors and also manages publicity for the Happy Canyon Night Show.

"When Fred first called dad about the idea, he didn't hesitate," says Kenzie. "Dad said, 'If you need shoes, you go to a shoe store, and if you need food, you go to a farmer.'"

To date, Farmers Ending Hunger has donated over 25 million pounds of product to the Oregon Food Bank, based in Portland, which distributes it through a network of regional food banks in both Oregon and southwest Washington, says Ziari.

Seventy percent of donations come from Umatilla County within 75 miles of Pendleton.

"One farmer will give 20–25 cows each month that we turn into hamburger and distribute," Ziari says. "Another farmer gives thirty tons of potatoes every month of the year and another gives 25 tons of onions. Other farmers give peas, beans, carrots, cherries, hazelnuts, watermelon, and it's done on a regular monthly basis."

Kenzie says Farmers Ending Hunger connects the state and makes Oregon a better place to live.

"The rural and urban are coming together and taking care of each other. If everybody does their part, the sky's the limit. Just like how Cougs take care of other Cougs."

STAFF PHOTOS

Participants in the Round-Up Native American Parade, including hundreds from the Confederated Tribes of the Umatilla Indian Reservation (***above***). Early evening light over Pendleton fields.

Power of language

BY BRIAN CHARLES CLARK

Language, says Kim Christen, "is really about relationships. Languages bring to life relationships to other human beings, to ancestors, to ancestors that aren't human, to landscape, to histories, stories—to knowledge."

Christen is a professor of Digital Technology and Culture Program and the director of the Center for Digital Scholarship and Curation at Washington State University. The Center develops collaborative projects between scholars, students, and diverse community members, with an emphasis on ethical curation and equitable access. One of the projects is the co-curated and managed Plateau Peoples' Web Portal, a trove of Native American culture and a resource for teachers and community members working together to revitalize Native languages and cultures.

Christen prefers the term revitalization to preservation because, she says, "preservation conjures the idea that these materials and languages are not ongoing, critical parts of living cultures." The word also invokes a past in which the U.S. government simultaneously sought to document disappearing Native languages while, "at the same time, they were promoting genocide."

That, says Christen, was "a perverse notion of preservation."

Native children were forced into boarding schools that engaged in a brutal program of assimilation. Speaking a Native language was forbidden. Since languages "carry religious knowledge, knowledge of kin and knowledge of place," Christen says, these policies enacted cultural violence and traumas that extend to the present.

Language revitalization is not as simple as signing up for a French class. You can't really learn the full extent of an indigenous language except through social and cultural immersion, Christen says, because "words come from the landscape and from relationships," from the accumulated knowledge that results from living in and being related to a place for many millennia.

Christen and her colleagues work with Native teachers to create curricula that "get the students out there on the land so they learn not just the language but the knowledge that goes with it. Indigenous communities are asking, 'How do we use our language to empower the next generations to extend knowledge, to build relationships and to define how we want to live with the environment and others?'"

Revitalization projects also emphasize how indigenous people decide what they want to share. Instead of research models where indigenous peoples are subjects, projects of revitalization and return focus on collaborations that make indigenous knowledge a central concern. Native peoples have long known that not everything should be shared in the same way.

The trauma of historical events, such as the experience of Indian boarding schools, can be retriggered by something as seemingly benign as a photograph of an old building.

"For years," Christen says, "the policy was digitize first and have a takedown policy." But she and her team have a "purposeful workflow that respects Native knowledge and what should be shared." When a batch of old lantern slides depicting buildings at a boarding school in Oregon were uncovered in the WSU library archives, Christen shared the images with Native elders. There was an outpouring of emotion as memories were relived. But, eventually, the Native collaborators decided to digitize the images, and add contextualizing material.

"So now, when you look at the interior of this boarding school bakery, you also hear Umatilla elders talking about what they were forced to eat, how they lived and survived. It's this whole other way of educating and reanimating the place that values Native knowledge."

And that, Christen says, is a way of finding a new path that consciously avoids recommitting the violence of the past. Especially at a land-grant university situated on Native land, we must acknowledge that history, take responsibility, and "chart a different path" by "bringing together Native community members with researchers and taking the time to ask, 'How do we not do this this time?'"

PHOTO SHELLY HANKS

We asked for your winter memories of Washington State University in 300 words or fewer, and you delivered.

Responses spanned decades and delighted us. With anecdotes about sliding down hills on lunch trays. With vignettes about seeking out steam vents for warmth. With at least one story about disturbing Butch—then a real, live cougar—by ice skating late at night near his cage.

It wasn't easy to choose a winner. Here's an excerpt from the one that spoke to us the most. Find the complete entry—as well as all of the submissions—online at magazine.wsu.edu/winter-memories.

Just off campus, Bill and Velma Noteboom lived in an Airstream trailer, where we made "window-sill Jell-O" and blankets froze to the walls. The Notebooms' car took us everywhere, including the WSC gym to hear Tex Beneke. Outside, our formal gowns scooped up snow behind us.

We skated away our free time on the frozen practice field, and occasionally skied the golf course (when we could borrow the gear!).

Serious snow hit in late October and lasted until the March Chinook winds came. My snow boots left indents on my legs from daily treks to Bohler Gym…

— Janet Herren ('48 Comm.)

BY REBECCA PHILLIPS

learn more about McNair Scholars: mcnair.wsu.edu

The McNair connection

On January 28, 1986, the Space Shuttle *Challenger* exploded 73 seconds after takeoff, tragically killing physicist Ronald E. McNair, the second African American to venture into space.

A few months later, the U.S. Department of Education honored the astronaut by establishing the Ronald E. McNair Post-baccalaureate Scholars Program, which helps prepare first-generation, low-income, and underrepresented students for future doctoral studies.

At Washington State University, McNair undergraduate scholars have the chance to conduct faculty-mentored research projects and other challenging opportunities.

For Yoni Rodriguez, a senior in biochemistry, the McNair program plays a key role in furthering his dream to protect vulnerable communities from the effects of environmental toxins.

The son of Mexican immigrants, Rodriguez was born in Toppenish and began helping out in the fields alongside his parents at age five. He is the first in his family to attend college.

One summer, while working in the orchards to pay tuition, Rodriguez and his older Mexican coworker were accidentally sprayed with pesticide. Though the farm manager recommended immediate medical treatment, he declined to drive them to the hospital. In the end, Rodriguez drove and two days later, his coworker who had fallen ill was fired.

"I realized then that migrants in America encounter more than just xenophobic injustices," says Rodriguez. "They also run the risks of developing neurological diseases and cancers from their long-term exposure to pesticides."

He went on to complete coursework at Yakima Valley College, which included a research project investigating fetal anencephaly associated with contaminated drinking water on the Yakama Indian Reservation.

"I also tested my grandmother's home and was upset to discover the lead levels were above the legal EPA limit—to the point the state should have intervened," says Rodriguez. "I started thinking, 'What else don't we know?'"

Once accepted into WSU, he enrolled in the National Science Foundation's Research Experience for Undergraduates program with Von Walden, professor of civil and environmental engineering and a member of the Laboratory for Atmospheric Research.

In the lab, Rodriguez studied the health effects of wildfire smoke and helped develop air quality sensors for monitoring pollution.

He was chosen to be a McNair scholar in spring 2019 and asked Walden to be his mentor.

"My question was, 'What are we doing to filter the air for people in low-income areas who can't afford an expensive filter system?'" says Rodriguez. "A whole-house filtration system can run $12,000 or more. Even a good one-room filter can cost up to $700."

He decided his McNair project would test the efficiency of a simple box fan filtration system for removing dangerous pollutants during wildfire season.

"It has been such a pleasure working with Yoni," says Walden. "He is a very talented and hard-working student. I'm certain that Dr. McNair would be proud of him."

But Walden admits he didn't initially know who McNair was. The revelation only came later when he saw a presentation detailing McNair's history.

"I realized it was around the same time I sent an experiment into space as an undergraduate researcher at Utah State University," Walden says. "I thought, 'Oh, my gosh, I think he was on my shuttle!'"

Indeed, Walden had designed a physics experiment that flew on the *Challenger* on February 3, 1984, at the same time mission specialist McNair was aboard.

"He may have even flipped the switch on my experiment," says Walden. "It's a weird coincidence. And now, as a direct beneficiary of him being an astronaut, I'm advising other undergraduates in the McNair program. It's a pretty cool connection."

YONI RODRIGUEZ (LEFT) WITH VON WALDEN (PHOTO SHELLY HANKS)

BY PAT MUNTS

a visit to the Burundi school gardens: magazine.wsu.edu/gallery

Gardens of hope in Burundi

We landed in Bujumbura, Burundi, last February in a driving thunderstorm. We got soaked trying to get to the terminal but that wasn't important. What was important was that the storm signaled the start of the rainy season and there would be water for our 4-H sister schools' gardens.

Since 2013, Washington State University 4-H and Extension faculty, staff, and volunteers have been working with Burundian partners to develop a garden-based, 4-H Positive Youth Development (PYD) program at six elementary schools near Gitega in the small, east central African country. The WSU group collaborates with the Burundian-based Trauma, Healing and Reconciliation Services (THARS), an organization dedicated to re-establishing peace and promoting reconciliation after a 13-year civil war that damaged the mountainous country's agricultural, economic, and social structures.

The partnership emerged after Mary Deen, associate professor in Human Development, visited the THARS teaching center near Gitega in 2012. During the trip, she visited several local elementary schools and learned that the students had no access to food during the school day and many came to school hungry. Deen, who has worked with 4-H for decades, quickly realized that 4-H international programs could easily be applied to Burundi. She immediately found a willing partner with THARS.

Deen formed a team from Human Development, 4-H, and Extension to develop the program, while THARS recruited local support staff. The team identified culturally appropriate agricultural teaching resources for Central Africa, including an elementary school garden curriculum written in French, which was translated into Kirundi, Burundi's indigenous language. Deen and King County Extension Director Kevin Wright returned to Burundi in 2013 to train the Burundian 4-H staff and educators. As a way of taking ownership of the program, the Burundian leaders translated the term "4-H" into "UUAA," the Kirundi equivalent of "Head, Heart, Hands, and Health." The Burundian team offered workshops for teachers, school administrators, and community leaders on sustainable agricultural techniques and the tenets of PYD.

In September 2015, garden spaces were cleared and planted at each school and became an instant hit with the students, teachers, and their communities. The students learned about sustainable gardening practices such as using raised beds, managing soil fertility, mulching, natural pest control, and sustainable water management. Students took their extra produce and new ideas home to their mothers, the farmers in Burundi. Burundi follows a traditional African agricultural model that relies on seasonal rains, hand tools, and traditional seed stocks. Water catchment systems were installed at the schools to supply water to the gardens outside the seasonal rains, which have become unpredictable in recent years.

After a few years of political instability, our WSU team returned to Burundi last February to provide workshops and document the program's impact. Deen and her husband Ed, Wright, and I presented an overview of 4-H, PYD, and—since there are no food processing or refrigeration capabilities available to farmers when they bring their crops to market—we also taught solar-powered preservation of fruits and vegetables. The dried food can be stored at home for use between harvests or taken to market to extend sales between harvests.

Sam Tower and Sarah Storm-Tower, 4-H volunteers and representatives of nonprofit Play for Peace, also joined us. They facilitated noncompetitive games that emphasize cooperation and communication. Play for Peace is an international organization that uses cooperative play to bring together children, youth, and organizations in communities affected by conflict.

The team visited the schools and were joyously welcomed with Burundian traditions of girls dancing and boys drumming. Some of the girls had translated the 4-H pledge into a song and a dance.

We toured the schools' gardens, where the students proudly explained what they were growing, the techniques they were using, and why. Each raised bed was managed by a group of students who cooperatively made decisions about growing and harvesting their crops. At the Busagana School, the students used their new agriculture skills to purchase a weaner pig with plans to sell the babies to the community to raise funds for their garden.

As we were saying goodbye to the students, they broke into "We Shall Overcome" in English. It was one of those magical moments that connected us all.

Pat Munts is an agricultural coordinator with Spokane County Extension. Learn more and donate at extension.wsu.edu/4h/youth/global-4-h/burundi.

COURTESY PAT MUNTS

BY RACHEL WEBBER

Sensing something wrong with bridges

It isn't always visible from the outside, but major damage to bridges, tunnels, and roads has left U.S. infrastructure in critical condition.

"In the last century the life expectancy of bridges was about 50 to 70 years old at the maximum," says Washington State University civil engineering professor Pizhong Qiao. "But right now, we are past or near the limit."

Qiao and doctoral student Ayumi Manawadu are developing and testing sensors to assess the health of concrete with a focus on bridges, without relying on visual clues.

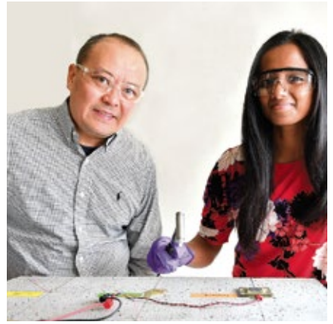
Transportation workers typically assess the condition of bridges through on-site observation, photographs taken from aircraft, or larger sensors that must be drilled directly into concrete. But a few years ago, Qiao started thinking about a sensor that could go on the outside of a bridge to put together a picture of what was going on within concrete.

In the Smart Materials Lab, Manawadu takes a small metal hammer and hits a wafer-thin sensor smaller than a dime attached to a beam of concrete. She watches as her nearby computer collects information she can translate into the time, location, source, and severity of damage.

"After the impact, it might look like everything's okay on the outside," said Manawadu. "But there might already be damage inside."

According to the 2019 Washington Infrastructure Report Card, the American Society of Civil Engineers graded the state's bridges with a C+ and a C in overall infrastructure.

Qiao's approach also relies on types of sound waves beyond the limit of human hearing: ultrasonic waves. They are Rayleigh waves, a type of surface acoustic wave that travels along the surface of structures. In fact, he often talks about bridges as if they were an older body, appearing healthy on the outside but still aging inside.

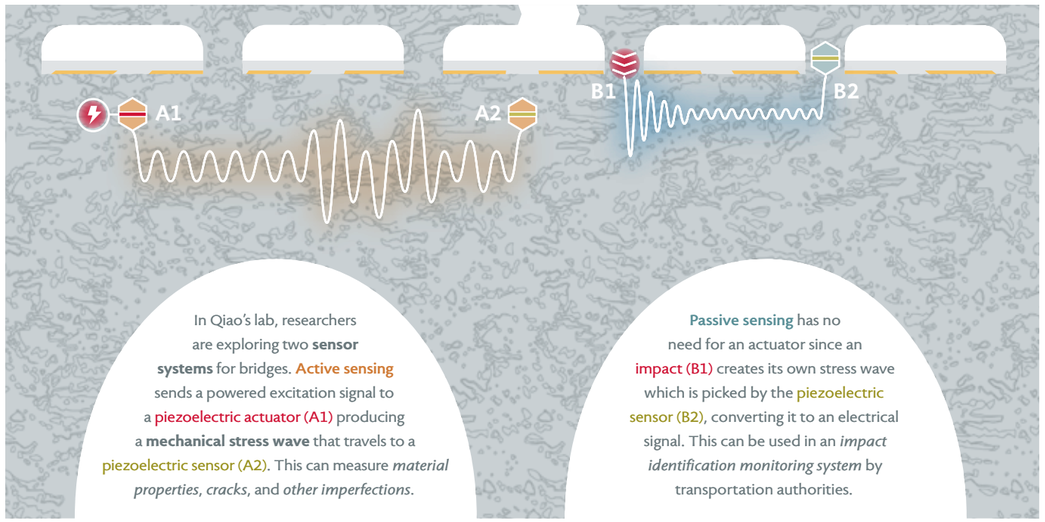


PIZHONG QIAO WITH ASSISTANT AYUMI MANAWADU (PHOTO ROBERT HUBNER)

The tiny sensors, which can convert mechanical energy, such as squeezing or stretching, into electrical energy, send ultrasonic waves through the concrete to pick up on cracks or other damage. No drill required.

The team envisions the bridge sensors will join the ranks of other smart city technologies in the next few years—and there's a good chance they will be monitoring some of the 7,300 bridges in Washington state.

In addition to an increase in population, demand for vehicles, and the natural course of aging, magnesium chloride in deicers used to clear ice and snow from roads the past twenty years have also softened and damaged concrete. WSU researchers hope to improve those conditions and earn a higher grade for infrastructure. ✳



STAFF ILLUSTRATION

BY DALLEN ROSE

SERVICES*center*

Veterans preserve history

The cool, high-ceiling basement room in College Hall is furnished in Spartan fashion. On this summer day it's library quiet, but not by tradition or rule. It's the natural product of deep concentration, as the lab's three curation technicians, all student veterans, work their way through a collection of ancient artifacts.

At a cluster of mismatched tables in the center of the room, Washington State University senior Chris Sison carefully examines a tray of artifacts, occasionally consulting a set of printed cards or making a note in pencil. The contrast between this and his recent Army tour of duty in Afghanistan—"chasing militants and kicking down doors," as he puts it—couldn't be more stark.

Fellow curation technician and Marine veteran Stephen Bergquist, a junior majoring in Japanese, sums up the difference between military and civilian life succinctly: "Less stress, more worry."

Lives don't hang in the balance anymore, but when you leave the military, your own future suddenly does. Yet neither stress nor worry impinges upon the lab's occupants as work proceeds under the friendly, watchful eye of Cassady Fairlane ('14 Anth.), the technicians' trainer and guide in the Veterans Curation Program (VCP).

While Sison sorts through a paper bag filled with chipped stone shards and partially completed stone points, Fairlane explains how the techs identify each item and note its essential characteristics. Artifacts of particular significance also get photographed to facilitate future study.

In a separate room, lit only by a lightbox and a high-resolution monitor, Trent Raymer ('19 Zool.) photographs a handful of arrowheads and spear points that Sison had flagged earlier. Like everything else in the VCP lab, it's a painstakingly precise process. Future researchers will need to draw solid conclusions from the lab's work, so every detail has to be just right.

Meanwhile, Bergquist works at a computer station. Unsurprisingly for a former diesel mechanic, it's his least favorite station in the lab. Still, he clearly articulates its importance: Without the maps, legal documents, notes, and narratives tying their provenance together, most of these artifacts would be merely random (if interesting) ancient debris.

"I care a lot about this stuff," says Fairlane. She gestures toward the boxes that line the walls, but it's clear she's also speaking in a larger sense. "I want to make sure it's preserved."

The program, which is funded and overseen by the U.S. Army Corps of Engineers, has a twofold mission. The first is Fairlane's specialty: preserving history.

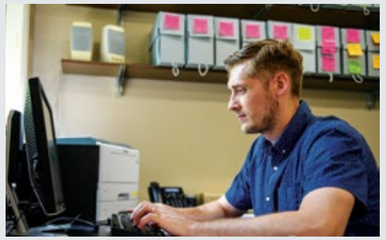
The VCP labs process at-risk collections that have been languishing in boxes and storage rooms for years. Decades, even. Most of the WSU lab's collections were excavated in the 1980s.

In addition, the program gives its veteran employees a boost in the sometimes difficult transition from military to civilian life. The WSU lab, which just completed its first year in the program, is one of several satellite locations scattered across the United States. It works on collections from the Army Corps of Engineers Portland District, which covers most of Washington and Oregon.

While the VCP lab sites all aim to help prepare their employees for college applications and civilian careers, the WSU lab technicians happen to already be in college. In fact, Raymer earned a bachelor's degree prior to joining the Air Force; he's getting a second one to kick-start a new career.

As the summer winds down, the lab's first cohort is moving on: Raymer is hitting the job market, Sison will begin his final year in the WSU ROTC, and Bergquist is finishing a degree in Japanese.

And what happens to all those artifacts they've painstakingly cataloged, photographed, sealed, and re-boxed? They sit and wait. Until a more permanent home is found, the WSU Museum of Anthropology will store them with the rest of its collections. For the first time since they were excavated, these newly curated artifacts—remnants of ancient lives—are available for study and research. ✳



CLOCKWISE, FROM TOP LEFT: TRENT RAYMER; STEPHEN BERGQUIST; (*IN PHOTO FROM LEFT*) DIANE CUREWITZ, BERGQUIST, CHRIS SISON, CASSADY FAIRLANE, RAYMER; FAIRLANE. *PHOTOS ROBERT HUBNER*

lots more small farm photos: magazine.wsu.edu/extra/agritour

Little farms on the prairie

BY REBECCA PHILLIPS

PHOTOS CRYSTAL TORESON

Agritourism gives family business a fresh lease on life, and a little fun to boot.

Clockwise, from top left: Friendly goat at Mud Creek Farm; Trevor Lane with Connie Long at North Spokane Farm Museum; implements on display at Farm Museum; Jim Long with sheep at Fresh Cut Farms. ***Opposite, clockwise from top left:*** Portuguese copper stills at Evening Light Lavender; door detail at The Barn wedding venue; Christmas trees grow at Veley Farm; Sami, Lori, and Kiele Robirts (*left to right*) at Veley Farm; Lavender stalks from Evening Light Lavender.

Rainclouds sweep across the prairie as we pull up the driveway to Fresh Cut Farms just north of Spokane. Calling a greeting, owners Jim and Connie Long open the gate and welcome us for an early July tour of their market gardens.

"We're a work in progress—new to the agritourism business," says Jim. "We stood up the farm in 2016 as something to do when I retired from the Air Force. So far, it's been a lot of trial and error."

He unlatches a seven-strand hot wire fence, meant to keep the deer and coyotes out, and ushers us into the garden. The weed-free area is lush and overflowing with early squash, greens, tomatoes, potatoes, corn, cabbage, peppers, and more.

"We've learned a lot," says Connie. "We sell out at every market, so now our challenge is to grow more food."

Fresh Cut Farms is one of thirteen charter members in the Wild Rose Prairie Community Association, an agritourism venture mentored by Trevor Lane, Washington State University Ferry County Extension director. Good-natured and easy-going, Lane joins us while we're admiring the Longs' strawberry patch.

As we walk, it becomes obvious—from the land-clearing pigs to curious sheep and orchard—that the couple's new project is highly labor intensive. At the top of the

list is restoring the original homestead—an 1890s clapboard house complete with gables and gingerbread trim that is listed with the Spokane Historical Society.

"Our plans are to turn it into a historic bed and breakfast that offers a day-in-the-life-of-a-farm experience with specific events like a shearing day or lambing season," Jim explains to Lane. "We also want to put a roof on the old log barn and make a venue out of it."

"The million-dollar question is what do we focus on first here?" says Connie. "The animals? The fence? The garden? The old house?" Lane, whose specialty is community economic development, promises to sit down and go over it all with them soon.

They're in good hands. Lane, as a board member of the Washington Festivals and

Events Association, helps troubleshoot problems for small-town festivals as well as large events like the Skagit Valley Tulip festival, Washington, D.C.'s National Cherry Blossom Festival, and the Seattle Chocolate Festival. He honed his skills as owner-operator of the Backwoods Music and Camping Festival in Oklahoma, which became one of the largest in the region. Lane sold the business when he made the move to rural northeastern Washington in 2014.

"The economic landscape in Republic has declined significantly during the time I've been here," says Lane. "First, the lumber mill shut down. Then, they pulled out the railway and locals had no way to transport goods. On top of that, the gold mine closed. County budgets are strained—commissioners are wringing their hands trying to maintain the services we have left."

As the newly appointed Extension director, Lane knew he had to work quickly. Capitalizing on the area's nostalgia and pristine beauty, he brainstormed with community leaders, including Jenny Konz, owner of The Goat Farm-Goat Patrol. Together, they created a farms and recreation map aimed at promoting agritourism in Ferry County. The map highlights 20 small farms and 20 other sites offering rural education or entertainment.

"That was our first success," Lane says. "That's when I showed proof of concept—that you can bring farmers together to organize and collaborate. We are now in the early phases of working with the Colville Confederated Tribes to expand the map."

Ferry County is hardly unique in its struggles. Lane says most of northeast Washington is economically distressed, and word on the street is that agritourism is where you get your money.

So much so, in fact, that Lane's agritourism workshops are now in demand all over the state. It was at a 2018 training hosted by Pat Munts, Spokane County Extension horticulture and agriculture coordinator, that Lane met Jim and Connie Long. They took the information back to their fledgling 501c3 nonprofit group and shared it with Ari Alvarez, Lori Robirts, and a few others.

"The Wild Rose Prairie Community Association did everything we did in Ferry County but made it more formal," Lane says. "They're now writing grants and doing other fundraising as well as research on how to better serve customer needs and desires."

This year, the organization kicked off the growing season by hosting their second annual Wild Rose Prairie Days which included country-grown fun at Fresh Cut Farms, Mud Creek Farm, Evening Light Lavender, North Spokane Farm Museum, and more.

"Everybody I've talked to has said this has been a big financial shot in the arm," says Lane. "Every month gets a little better and they see more traffic and visitors. It's a quick way to infuse a little cash and help the farmer with gas and other bills."

WELLbeats

A half century of care

BY ADDY HATCH

Fifty years, two moves, several name changes and 10,000 alumni—impressive numbers, but ones that don't tell the whole story of the Washington State University College of Nursing.

The story is also in the soothing words and touches. In the correct calls on patient care made by virtue of training and experience. It's in the leaders who emerged, and in the research to advance knowledge and practice. The story of the college is in the Coug nurses who've served in hospitals and clinics, nursing homes and military bases around the world for 50 years.

"The college has built a legacy that people recognize and value," says Chris Liss ('18 Nursing). He's part of that legacy; his mother was a graduate of the Intercollegiate Center for Nursing Education, the precursor of the WSU College of Nursing. Now he's working in the emergency department at Seattle Children's Hospital and says candidly, "I know I'm riding on the coattails of those who've come before me."

The WSU College of Nursing was the first nursing program in the country to bring together students from multiple universities and colleges. "The first group of students were the benefactors of a small cohort of faculty who were determined that this was to become a nationally recognized nursing program," says Professor Emeritus Charlene Clark. "History can attest to its growth and success."

Teresa Farias can confirm the college's power to change lives.

+ history of WSU Nursing, the first class, and more: magazine.wsu.edu/extra/nursing-history

PHOTO CORI KOGAN

Farias was the first in her family of 11 kids to attend college, graduating with her bachelor's in nursing from the Tri-Cities in 2015. She didn't start on her nursing degree until she was 33, newly divorced and with three children. Now she's a labor and delivery nurse at Trios Health in Kennewick, where she sees part of her role as leading by example. She's certainly done that at home: her daughter and niece are both in the nursing program at WSU, her son entered the WSU College of Pharmacy and Pharmaceutical Sciences this fall, and her nephew is strongly considering nursing, too.

"I feel like I opened the doors for them," Farias says.

Mykette McFarlane is a J2, meaning she's in her second semester of nursing school at the College of Nursing in Spokane. She's already learned enough to know that nursing calls to people who are empathetic, yet practical.

"It's in the way we assess patients, not in terms of a drug or a diagnosis, but in, 'How can I get you whole again, or at least as close to whole as you were before?'" she says. "Or if you're at the end of your life, how can we make that as beautiful as possible? Any time you bring in a nurse, you bring in humanity."

WSU COLLEGE OF NURSING

Locations: Spokane, Vancouver, Tri-Cities, Yakima, Walla Walla

Alumni: Approximately 10,000 over 50 years

Students: Approximately 900 total (all campuses, all programs)

Degrees: RN-BSN, a degree completion program for working RNs; bachelor of science in nursing (BSN); master of nursing (MN); doctor of nursing practice (DNP); PhD

The WSU College of Nursing will celebrate its next 50 years at a gala on March 7, 2020, at the Historic Davenport Hotel in Spokane.

BY CYNTHIA HOLLENBECK

Where science takes you

When Washington State University doctoral student Kaitlin Witherell was a child, she frequently went to work with her scientist mother. Through her young eyes and vivid imagination, she watched her mother complete complex calculations that filled entire pages, make exotic and colorful solutions, and use alien-like equipment that seemed more magical than practical.

Witherell learned this magical world was science, and it eventually cultivated her interest in microbiology. That curiosity would lead her to exploring innovative antimicrobial solutions at Washington State University.

In high school, her passion for science first came to fruition in an extensive project on the microorganisms that survive by oxidizing the iron of the *Titanic*.

Witherell earned a microbiology bachelor's from the University of California, Davis, where she fell in love with its community of shared knowledge and support. And, while a supportive community would be a factor in her choice of graduate school, another benefit cemented her decision.

"I was interested in the Immunology and Infectious Disease program at WSU," Witherell says. "I visited the Pullman campus for my interview, and everyone was so nice, supportive, and willing to help." After she learned she'd received an Achievement Rewards for College Scientists (ARCS) award, Witherell chose WSU, where she's studying microbiology in Douglas Call's laboratory in the Paul G. Allen School for Global Animal Health. Molecular epidemiologist Call is also her advisor.

The Seattle Chapter of ARCS Foundation sustains a strong partnership with Washington State University and the University of Washington, and they support 157 scholars from both universities. It's been 20 years since ARCS began funding graduate research at WSU's College of Veterinary Medicine. Now the awards support 53 fellowships across four colleges at WSU in perpetuity through endowed doctoral fellowships.

When Witherell started her graduate program at WSU, she was stunned to realize how much she didn't know. Fortunately, her "imposter syndrome" dissipated as she went to work in a field she loves.

"My experiments were going very well, and I was getting mountains of good data I could present at symposiums and conferences." Simultaneously, she found encouragement through another source. "It helped that I had an entire team behind me," says Witherell, "encouraging me to work hard and push through my confidence issues. Bruce and Joanne Montgomery, my ARCS supporters, are wonderful, generous people and made me realize I deserve to be here. I hope to pay their good work forward by supporting other young scientists when I have the means to do so."

In the Call laboratory, Witherell works on a collaborative project with the Fred Hutchinson Cancer Research Center involving antimicrobial peptides. These antimicrobial peptides, called knottins, are produced as a natural defense mechanism in organisms, such as plants, sea snails, venomous snakes, and scorpions. The researchers from Fred Hutch contacted the Call lab because they had found a way to produce synthetic knottins called optides.

"I am fortunate to work with Dr. Call," Witherell says, "and this project is perfect for me. I'm passionate about my research, because I see how it can lead to creating new antibiotics to save lives. I can make a difference in the world. Plus, I enjoy the work so much it doesn't feel like work."

The Call lab's library of potential antimicrobials has already identified several optides effective at killing a variety of multidrug-resistant bacteria. Witherell's role involves finding which optides are most effective by themselves, which have synergy with extant antibiotics, and how optides kill bacteria.

Through her experience in the Call lab, Witherell secured an internship at Blaze Bioscience, Inc., in Seattle. Blaze is a partner with Fred Hutch and owns the rights to the optide project. "Blaze is a small company," she says. "So I frequently worked at Fred Hutch, which had the equipment I needed and enabled me to create some of the antimicrobial peptides I'd been researching."

After earning her doctorate, Witherell plans to seek a career in industry or government. "My objectives might change," she says, "but I will go wherever the science takes me."

PHOTO SHELLY HANKS

Dave Arnold is working on a book on the history of Cougar Crew—with all royalties slated to go to the club. Rowers from any era are asked to contact him at ***darnold@columbiabasin.edu*** *to describe their greatest memory of Cougar Crew or the impact WSU rowing has had on their lives.*

Quite a crew

BY ADRIANA JANOVICH

THEY HELPED BUILD THEIR OWN BOATHOUSE. AND WHEN A WINDSTORM BLEW IT DOWN, THEY HELPED BUILD IT BACK UP.

They also built their own dock, hit white caps on the water, and largely paid their own way. The wind came up more frequently than any funds. When particularly strong gusts unanchored their dock—and the current carried it almost all the way to the Tri-Cities—they helped haul it back to Boyer Park.

Fire broke out at their new, bigger, and sturdier boathouse at Wawawai Landing before they had a chance to bring in the boats, a blessing in an otherwise devastating blow. The same day as that blaze, in California, an alumnus won Olympic gold.

Cougar Crew, one of WSU's most successful club sports, is gearing up to commemorate its fiftieth anniversary. Organizers hope to see 1,000 alumni, family, friends, and other supporters at their gala on March 21, 2020. The dinner and auction are part of the team's annual Cougar Crew Days, which features a reunion, boat race, and opportunities to support the long, proud, and scrappy tradition of Cougar Crew.

"It was totally grassroots," says former WSU rower Dave Arnold ('88 History). "It was grit and perseverance and scrappiness. People sacrificed to do it."

In 1979, not quite eight years after the team's first practice, a heavyweight four with a coxswain from WSU's young program placed first at the Intercollegiate Rowing Association's national championships. A year later, in 1980, a coxed pair took home the same honor. Those early successes were followed by strong showings in the '80s and '90s, including winning Pac-10 championships for lightweight eights in 1985 and 1986. (Arnold was in the winning 1986 boat.)

But, by the early aughts, the number of rowers had dwindled, finances were sparse, and rowers and alumni feared the club might fold. "Cougar Crew was on the ropes," says Tim Richards ('84 DVM), chairman of the Cougar Crew Alumni Association. "The program needed stability."

Reorganizing the club crew team and galvanizing fundraising efforts have, at times, felt like an upstream paddle. But that hard work is beginning to pay off, and the association plans to continue growing its endowment with the goal of reaching $7 million—and relieving student-athletes of the bulk of the costs associated with rowing.

"You just never stop," Richards says. "That's one of the lessons I got out of crew. The reason you don't stop isn't for yourself; it's because you wouldn't dare let down the others in the boat."

MOST CLIMB ABOARD WITH NO EXPERIENCE. "One of the great attributes of Cougar Crew is that most of us, including me, didn't row in high school," says Ernie Iseminger ('91 History, Ed.), who rowed and coached for Cougar Crew.

Height is an advantage because "all the power in rowing comes from the legs," says Ken Struckmeyer, who coached Cougar Crew for 20 years and remains the longest-serving coach in the team's history. "People think it's the arms, but it's the legs."

It takes lots of time on the water, Struckmeyer says, to get just the right rhythm and learn the four parts of a stroke: catch, drive, finish, recovery. "You've got eight guys that you're trying to have in one motion, and they're going backwards. You spend nine months just trying to get unified."

Read memories and watch video of Cougar Crew alumni: magazine.wsu.edu/extra/cougar-crew

PHOTO SHELLY HANKS

Cougar Crew doesn't cut student-athletes. But, it isn't unusual for just half of a novice group to stick with the team throughout college. "I think rowing at Washington State is a great opportunity for any student at WSU," says Peter Brevick ('08 Phys. Sci.), head coach since 2017. "But it is not for everyone."

Cougar Crew isn't a scholarship sport; the bulk of rowers' expenses falls on their own shoulders. "We had to be scrappy," says Paul Enquist ('77 Mech. Eng.), who served as secretary-treasurer his junior and senior years—when coaching was volunteer and money was especially tight. He went on to win the men's double sculls at the 1984 Summer Olympics. "After insurance, we had no money for anything. We kind of struggled together for four years."

Rowers inevitably get cold and wet and catch a few crabs. Catching a crab means an oar enters the water at an angle instead of perpendicularly and gets caught below the surface. This motion slows—or even stops—the shell. The shell is a long, expensive, narrow, and highly tippable boat built for competitive rowing.

"When you're rowing three miles as hard as you can, I wouldn't say that's fun. But it is rewarding," says Struckmeyer, who oversaw some of Cougar Crew's greatest achievements—including the 1979 national championships won by a heavyweight coxed four dubbed "The Meat Wagon" for the rowers' sheer size.

"Rowing itself is really suffering," Arnold says. "It's a hard endurance sport. It's pain. It pushes you to the limit. You can't give up because other people are relying on you."

In the late 1990s and early aughts, Cougar Crew went through three head coaches in six years. By 2003, the team was down to eleven rowers and in danger of discontinuing. "It was kind of the dark period of WSU rowing," Arnold says.

Rowing with that few people "is really hard," says Danny Brevick, older brother of the club's current coach. The pair were roommates at WSU and rowed together on Cougar Crew. "It takes eight rowers and one coxswain to make the boat go. It wasn't uncommon for two people to sit on an erg (ergometer or rowing) machine for two hours while the rest of us were on the water."

Danny Brevick served as commodore for two years; his second year, he began reaching out to past commodores. What followed is now referred to as the team's "reawakening." Between 2004 and 2005, Richards says, "we started working on what the Cougar Crew Alumni Association was going to be. It never did die, but it was dormant for a while. Now, people are re-engaging to take the program forward. We're not quite there yet, but we're well on our way."

Today's men's roster has about 50 rowers while women's club rowing has about 20. "From where we were to where we are today is nothing short of stunning," Iseminger says.

It takes about $300,000 per year to run Cougar Crew, including coaching, equipment, and travel. The endowment is about $375,000 and growing, compared to about $60,000 in 2004. This year's gala alone raised about $87,000. One of Struckmeyer's watercolors—he paints Snake River and rowing scenes, and they're an audience favorite every year—went for more than $1,200.

"Peter and the new coaches, they're changing the mentality of the team," Struckmeyer says. "We want to win. We'll work hard to win. We expect to win. It's exciting."

But, he says, "It doesn't feel like it's been fifty years."

INSET COURTESY FINNRIVER FARM AND CIDERY

Not just the goose of holidays past

BY ADRIANA JANOVICH

THE HOLIDAY GOOSE—ONCE PRIZED FOR ITS RICH, DARK MEAT AND DRAMATIC-LOOKING PRESENCE ON A PLATTER—HAS BECOME A RARE BIRD. These days, it's more common to find turkey, beef, or pork at the center of a winter feast than an elegant and inherently festive roast goose.

South Dakota's Schlitz Goose Farm—with about 100,000 geese—is the largest goose producer in the United States. If you buy goose at the grocery store, it's likely from Schlitz. Locally raised goose is somewhat of a novelty.

"Geese were more likely part of the farm or food system in the days of homesteads and farmsteads. It was normal for families to raise their own geese for their own survival or their own sustenance," says Nicole Witham, the statewide coordinator for Washington State University Food Systems. "We're somewhat removed from those ways of life and how we buy our food now."

Roast goose was a staple at the Victorian table. The 1843 novella "A Christmas Carol" describes in-depth the anticipation for the Christmas goose. "Such a bustle ensued that you might have thought a goose the rarest of all birds; a feathered phenomenon, to which a black swan was a matter of course—and in truth it was something very like it," Charles Dickens wrote. Even Tiny Tim "beat on the table with the handle of his knife, and feebly cried Hurrah."

Roast goose—elongated, majestic-looking, and swaddled in a thick layer of fat—still makes for a spectacular centerpiece. But, throughout the generations, demand for goose has declined in the United States. According to the Agricultural Marketing Resource Center, Americans eat about a third of a pound of duck per person per year; consumption of goose is even less—so much less that a specific figure wasn't given. Sales experience an uptick during the holiday season. But geese aren't popular poultry.

Portrayals in art and literature present geese not just as a symbol of simplicity—the phrase "silly goose" comes to mind—but also selflessness, innocence, or personal freedom. In her famed 1986 poem "Wild Geese," Mary Oliver wrote, "Whoever you are, no matter how lonely / The world offers itself to your imagination / Calls to you like the wild geese, harsh and exciting."

Geese mate for life and are protective of their families, so they also represent loyalty, fidelity, home, and vigilance. In Homer's ancient epic Greek poem *The Odyssey*, they represent Penelope's suitors. Twenty geese appear to the queen of Ithaca in a dream only to be killed by an eagle representing Odysseus back home after twenty years of traveling. And, in ancient Rome, legend has it that the sacred geese of the Temple of Juno warned of an impending attack by invading Gauls by flapping their wings and honking.

Of course, then, there's Mother Goose. The term *la mère oye* dates to mid-seventeenth century in France, where Charles Perrault's collection of folktales was published in 1695 with the subtitle "Tales from my Mother Goose." Not quite a century later, in England, Mother Goose became synonymous with nursery rhymes following the publication of *Mother Goose's Melody, or, Sonnets for the Cradle*. The character is typically portrayed as an old woman riding a flying goose or, sometimes, as a bonnet-wearing goose.

Bred in ancient Egypt, China, and India, domestic geese arrived in the New World via Europe, where they remain popular—especially in northern countries—for holiday dinners. Roast goose is also particularly popular in Hong Kong, where restaurants specialize in the dish—often displaying whole birds, ready for carving, behind glass cases.

Today, breeding and raising geese in the Northwest is more the exception than the norm. And farms that keep them often use them not for meat but for help. "They're more like really good on-farm labor," Witham says. "They really help manage a lot of different issues, especially in an orchard situation where the trees are hardy enough. They don't injure or bother the trees; they just mow the grass. But, even in a strawberry or berry patch, they'll come along and graze along the bottom of the plants. They might also offer a byproduct of extra eggs. But I'm not seeing them much these days as a full-blown meat enterprise."

PHOTO VICTORITY/ALAMY

Finnriver Farm and Cidery in Chimacum, ten miles south of Port Townsend in rural Jefferson County, uses geese in its apple orchard to keep grass down. Their work "allows airflow down around the trunk and soil line, which is an area where we have a lot of problems with fungal pathogens because grass holds moisture. When you crop that grass really low, like the geese do, that allows for more airflow and helps relieve that pressure of the pathogens," such as anthracnose and collar rot, says orchard manager Cameron Denning, who landed a full-time job at Finnriver after completing a FIELD (Farm Innovation, Education, and Leadership Development) internship through WSU's Jefferson County Extension.

Two years later, in 2015, Finnriver acquired geese from WSU's Twin Vista Ranch on nearby Marrowstone Island. "We found that 30 geese could manage about two acres if you rotate them every month," Denning says, noting Finnriver's orchard covers ten acres. A grant from the Seattle-based Tilth Alliance allowed Finnriver to add 90 goslings from California's Metzer Farms as well as electric fencing, three solar fence energizers, and food and water dishes to help support them.

INSET: CAMERON DENNING (COURTESY FINNRIVER FARM AND CIDERY)

Today, Finnriver has about 100 geese. In addition to grass, "they eat whole apples that drop prematurely and, in the process, they're reducing the load of codling moth that would overwinter and become a problem the following season. Geese are vegetarians. But they're eating apples that have the larvae of the moth in them. We've seen a reduction in codling moth pressure since we've had the geese," says Denning, who's also led an orchard management workshop through WSU's Extension Regional Small Farms Program.

This is the first year Finnriver has been collecting goose eggs to sell to the public at a nearby farm stand and food co-op. The farm is also considering selling geese, directly to customers and on a small scale for a limited time, for meat. "We're finally at a point where we can make those decisions to balance the flock to meet our winter needs," Denning says, adding, "I think they would be sold in a heartbeat."

Goose is a good source of iron as well as B vitamins, riboflavin, zinc, phosphorous, and selenium. One 5-ounce serving has 41 grams of protein and 340 calories—of which 163 are from fat. Most of the fat on a goose lies under its skin, not marbled throughout the meat. During cooking, that fat melts and basically bastes the bird, helping to keep it moist and tender. You'll want to save it, too; goose fat stores well and makes for gloriously crispy roasted potatoes.

A recipe for roast goose from WSU Executive Chef Jamie Callison and his team: **magazine.wsu.edu/extra/your-goose-is-cooked**

WINDS CHANGE

From the surging polar vortex to unprecedented flooding and fires on every continent, the Earth's ventilation system is clearly out of whack.

BY REBECCA PHILLIPS

RESEARCH SHIP *THE LANCE* (PHOTO: NICK COBBING)

WHEN WAS THE LAST TIME YOU SAT ON THE GRASS WATCHING CLOUDS DRIFT PEACEFULLY ACROSS THE SKY? CAN'T REMEMBER? THOUGH IT'S EASY TO TAKE THOSE LOFTY BILLOWS FOR GRANTED, NOW MIGHT BE THE OCCASION FOR A SECOND LOOK.

For clouds are driven by wind and the winds are increasingly affected by global warming and climate change. In fact, some less-than-peaceful winds have recently pushed the frigid polar vortex into the Midwest, whipped up catastrophic cyclones in Mozambique, and pummeled India with erratic monsoon seasons that devastate millions of farmers. Even airplanes are being rocked by unusual supersonic jet streams.

In a sense, it's simple physics. Like a giant engine, the sun heats Earth with solar radiation. Temperature and pressure differences drive the "fan."

On Earth, the highest temperatures occur at the equator where warm air rises into the atmosphere and moves toward the poles as a low-pressure system. At the same time, cool air from the poles is drawn toward the equator as a high-pressure system. In general, winds tend to blow from high to low pressure areas.

It's a planetary air circulation system that has been very consistent and mostly reliable—despite occasional nudges from El Niño and La Niña—one that modern mariners still use to navigate the globe.

Recently, however, these wind currents have begun changing in unpredictable ways that sometimes defy scientific models. The outcome is confusing, complicated, and life-altering for people in every nation of the world.

According to Von Walden, professor of civil and environmental engineering and a member of the Laboratory for Atmospheric Research at Washington State University, these capricious winds are now the subject of an emerging area of research called atmospheric dynamics.

Although it is not his field of expertise, Walden has an interest in wind dynamics, especially the polar vortex and how it could affect his ongoing polar meteorology research. Over the years, Walden has conducted studies in the Arctic and Antarctic regions and is now leading a long-term National Science Foundation project at Summit Station in Greenland.

One of his top concerns is the fact that the Arctic is warming twice as fast as anywhere else on Earth, causing sea ice to melt at unprecedented rates.

Walden begins by describing three basic categories of wind. The first are the surface winds that we experience every day as frontal weather. Next, reaching up to about six miles in altitude, are the tropospheric winds. These include the trade winds in the tropics and westerly winds in the mid-latitudes.

At the boundary between the troposphere and stratosphere, five to nine miles above Earth's surface, come the jet streams—high-powered wind currents that can reach more than 275 miles per hour. There is usually little turbulence at this height making it a sweet spot for commercial airline travel.

Walden says jet streams occur due to the large temperature difference between the warm lower latitudes and bitter cold polar regions. That difference creates a sharp contrast in air pressure which drives the winds.

Since we live on a spinning planet, those winds are countered by the Coriolis force, causing jet streams to blow from west to east. Earth has four jet streams—a subtropical jet and a polar-front jet in each hemisphere.

The polar vortex is the northern hemisphere's polar-front jet stream, says Walden. "It's always been there. It didn't just appear one day. But we believe the polar vortex is changing because of climate change.

"Before humans caused global warming, we had an extremely cold north pole and a very strong jet stream going around that pole. It was very circular as the temperature differences were greater then. Those strong circular winds held the polar vortex in place for the most part.

"Now, as the Arctic warms faster than anywhere else on Earth—and it's scientifically measurable—the temperature difference between the north pole and mid-latitudes is decreasing," he says. "The Earth adjusts and the winds aren't as strong.

"As a result, the jet stream gets lazy and begins to have big fluctuations and gyrations. It's not so circular anymore and winds go way north and way south and those changes in polar vortex cause interesting weather events in certain areas.

"On the news we hear about the polar vortex making it very cold in Chicago for example. When I hear that, I'm always thinking it's really warm somewhere else in the Arctic. Polar air is being allowed to slip down south, but somewhere else in the Arctic, there's a big blob of warm air going north. You can't just look at your one location—you need to look at the entire northern hemisphere.

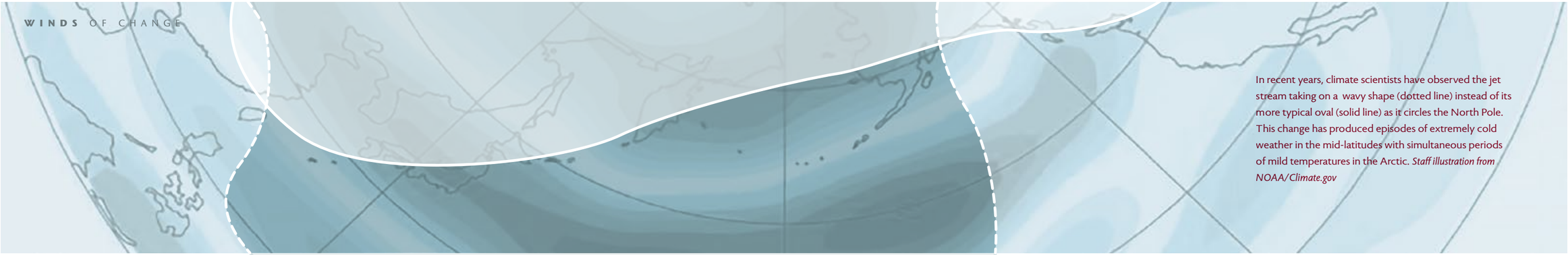
"Climate change is like loading the dice to see more of these types of unusual weather events in the future," Walden says. "As greenhouse gases accumulate and the climate adjusts in response, the probability of these events increases."

CLUTTERING UP THE ATMOSPHERE WITH CARBON DIOXIDE, OZONE, AND OTHER GREENHOUSE GASES HAS BEEN SHOWN TO INFLUENCE WIND PATTERNS BUT MANY OTHER FACTORS CONTRIBUTE TO A VERY COMPLEX EQUATION—FOR ONE, NATURAL AEROSOLS.

Alex Guenther ('86 MS, '89 PhD), an atmospheric chemist at the University of California, Irvine, collaborates with hundreds of other specialists around the world to solve questions concerning climate, air pollution, and related phenomena.

Guenther previously worked for the National Center for Atmospheric Research and contributed to the Intergovernmental Panel on Climate Change (IPCC)—the leading body of experts on the state of climate change science. The IPCC is run by the United Nations and is dedicated to "providing the world with an objective, scientific view of climate change; its natural, political, and economic impacts and risks; and possible response options."

Guenther also spent a few years at the Pacific Northwest



In recent years, climate scientists have observed the jet stream taking on a wavy shape (dotted line) instead of its more typical oval (solid line) as it circles the North Pole. This change has produced episodes of extremely cold weather in the mid-latitudes with simultaneous periods of mild temperatures in the Arctic. *Staff illustration from NOAA/Climate.gov*

National Laboratory in Richland where he developed the Model of Emissions of Gases and Aerosols from Nature or MEGAN. MEGAN measures natural environmental emissions and is used by the Environmental Protection Agency and included in virtually all climate models.

"It's not just cars and factories that emit chemical gases and particles into the air," Guenther says. "Everything on the planet contributes to the composition of the atmosphere including plants, dust, and salt from the oceans.

"Some of the same types of compounds you'd get from the tailpipes of cars are emitted from trees and other vegetation. Pine needles, for example, emit a volatile organic gas or terpene that you can smell when you're walking in the forest." In fact, Guenther says about 80 percent of global organic aerosol precursors in the atmosphere are generated by natural emissions.

"In a clean, pristine environment, the compounds emitted from trees don't have a negative impact," he says. "But in a polluted atmosphere, these volatile organic compounds can form substances that affect both the ability of sunlight to reach the Earth's surface and for Earth's energy and heat to pass back out into space."

Though greenhouse gases continue to rise and smog remains a major problem in cities such as Dallas and Los Angeles, Guenther says overall levels of pollutants like ozone and smoke-stack particles are dropping in the United States and Europe thanks to diligent clean-up efforts. As a consequence, the percentage of natural emissions is on the rise.

"When you get down to these low pollution levels, natural emissions become very important in determining the strategies we use to protect air quality," he says. "In essence, these plant compounds act as fuel that can be ignited by air pollution.

"When you burn fossil fuels, you release a lot of nitrogen oxides (NO_x) into the atmosphere. Plant terpenes and other compounds interact with NO_x to change the chemistry of the atmosphere and produce ozone and particles, all of which eventually affect the climate and, in turn, the wind patterns."

Guenther is currently studying atmospheric chemistry in remote areas of the Amazon jungle and Australia, which have recently experienced record-breaking heat, drought, and fires. Closer to home, he and his colleagues are investigating curious air pollution patterns in southern California.

"The strategies to clean up the air in L.A. had been working and pollution levels were consistently dropping year by year," he says. "But recently, it hasn't dropped and ozone levels actually have gone up a bit, even when you exclude periods influenced by wildfire smoke. And it's not clear why.

"According to models, it looked like pollution levels should be dropping as they reduce nitrogen oxides in the air. So, government agencies are very interested in finding out why. One thing that seems likely is the droughts we've been having here. We're thinking the droughts and heat are having an impact."

GUENTHER ISN'T THE ONLY RESEARCHER SCRATCHING HIS HEAD OVER CLIMATE TRENDS THAT DEVIATE FROM PREVIOUSLY RELIABLE MODELS AND PREDICTIONS. ON THE OTHER SIDE OF THE WORLD, CLIMATE SCIENTISTS LIKE DEEPTI SINGH UNTANGLE A PUZZLING BALL OF FACTORS CAUSING MISERY FOR THE PEOPLE OF SOUTH ASIA.

Originally from India, Singh is now an assistant professor in the School of the Environment at WSU Vancouver, where she investigates alarming shifts in the South Asian monsoon season. Approximately 1.8 billion people rely on these warm summer rains for their water supply, so unexpected variations can be a matter of life or death.

"All agricultural activity is triggered by the start of the monsoon, which brings about 80 percent of the area's total rainfall," Singh says. "Most farmers in India, Pakistan, Bangladesh, and neighboring countries wait till the onset to start planting crops. They also rely on the monsoon to replenish rivers and wells."

Singh says the arrival of the summer monsoon is the result of a seasonal reversal of wind patterns that is triggered by a seasonal reversal of temperature gradients.

During winter, the Indian Ocean is slightly warmer than the land, causing winds to blow toward the sea. As land heats up during summer, often exceeding 120 degrees Fahrenheit, the winds change direction carrying moisture-laden ocean air inland where it is released as monsoonal rainfall.

Since about 1950 however, this temperature gradient has steadily weakened causing a subsequent weakening of the monsoon and decline in rainfall, says Singh. Yet curiously, there's been a recent uptick in precipitation.

"It's interesting because if you look at the last 10 to 20 years, you see a rapid increase in temperatures from global warming," she says. "But when you look long term, from 1950 to 2000, you see a slight cooling trend over that part of the subcontinent during monsoon season specifically.

"It's confusing as generally greenhouse gases cause warming everywhere. But over South Asia, we have some really complicated processes going on. There are other human activity factors involved that could be responsible for that cooling trend."

One culprit is the massive amount of man-made aerosols in the atmosphere—the tiny particles released from burning coal and other fossil fuels. The level of aerosol pollution over South Asia is the highest in the world besides China. In addition, the region claims the world's most intensive use of irrigation, especially in northern India.

"Irrigation can have a pretty substantial cooling effect on climate in the area," says Singh. "Some people are even toying with the idea of using it as a mitigation strategy for global warming, though groundwater depletion is a concern."

On a deeper and more ominous level, Singh says the monsoon rains have grown increasingly erratic with dev-

Right: Walden's mobile research facility in Greenland. *Courtesy Voiland College of Engineering and Architecture.*

Opposite, from left: Walden studies clouds and other atmospheric phenomena in bitter cold weather. *Courtesy Von Walden.* Alex Guenther measures the atmospheric effect of pine needle terpenes in Colorado. *Courtesy Alex Guenther*

Deepti Singh listens as Indian farmers discuss the impacts of erratic monsoon seasons. *Courtesy Deepti Singh*

astating consequences. "We've seen a trend toward extreme precipitation—widespread intense rainfall events plus an increased frequency of drought between the intense rainfall."

The changes also affect Africa and other regions. The South Asia monsoon system is a large-scale wind pattern that extends to the Horn of Africa and is part of a global monsoon system that affects Asia, Africa, Australia, and parts of the Americas.

And because the Indian Ocean has experienced some of the strongest warming trends, monstrous storm systems—like the cyclones that hit Mozambique and Malawi earlier this year—are becoming more frequent in the region.

Such ferocity was on display last July when South Asian cities, including India's financial capital, Mumbai, were overwhelmed with the heaviest monsoon flooding in a decade.

"The Himalayan areas of northern India, Pakistan, and Nepal also had some really intense flooding that affected millions, causing massive amounts of damage and many deaths," says Singh. "The impacts are especially dangerous for the masses of vulnerable people living in slums or refugees forced to flee the Rohingya crisis in Myanmar."

At the same time, severe drought has parched crops, caused despair, and contributed to an alarming farmer suicide crisis in India, she says. "Every year, during and after monsoon season, there are reports of hundreds of farmers taking their lives because they were affected by consecutive crop failures or poor yields."

Most models suggest these violent and unpredictable weather events are likely to worsen in the future as greenhouse gases continue to rise.

"We know the cyclone systems get stronger with warmer oceans as they cause more rainfall and become more destructive," says Singh. "We're also likely to see more severe droughts simply because as temperatures get warmer, it generally affects the severity of droughts.

"Although the overall monsoon circulation is likely to weaken due to changes in temperature gradients, that doesn't necessarily translate to a weakening of the monsoon rainfall," she says.

"A warmer atmosphere holds more moisture which can compensate for the weakening circulation. So, there is quite a bit of uncertainty about which of these competing effects will win."

ALL THIS UNPREDICTABILITY LEADS BACK TO WALDEN AND THE FACT THAT THE ARCTIC IS WARMING TWICE AS FAST AS THE REST OF THE WORLD. HE SAYS IT'S DUE TO SOMETHING CALLED ARCTIC AMPLIFICATION, AND CLOUDS ARE PLAYING A ROLE.

In 2015, Walden spent a month with a group of international scientists aboard the Norwegian research ship, the *Lance*, in the Arctic Ocean. There, as the Fulbright Distinguished U.S. Arctic Chair, he collected atmospheric data including measurements of clouds in an attempt to determine the causes of thinning sea ice.

"Imagine we have an ice-covered Arctic Ocean—and ice is very reflective of sunlight," he says. "Now, start warming up the Arctic and the ice melts, exposing ocean water which is very good at absorbing solar radiation. This causes more warming, which melts more ice and exposes more seawater which absorbs more sunlight which melts more ice and exposes more ocean. The process continually feeds back on itself—it amplifies."

Recent scientific analysis, including Walden's Arctic Ocean and Greenland research data, showed that clouds forming in the Arctic contribute a surprising amount to the balance of energy at the polar surface. Clouds, they found, add to the warming trend, especially in fall and winter.

Walden says that although it is an extremely complex process, the earliest climate models constructed in the 1980s and early 1990s largely predicted Arctic amplification. "We've known this for a very long time," he says. "We're seeing that trend year after year, for example, with the extensive melting of Greenland ice last summer.

"And, as Arctic amplification continues—and temperature and pressure gradients shift—we're loading the weather dice for Category 5 hurricanes, a bad fire season, and other extreme events."

He pauses. "Yet, you can't say one fire season or the next was caused by climate change as it may have naturally done that anyway. It's confusing for some people to understand that we can't necessarily tie a weather event directly to climate change. And, if we can't do that, why are we predicting anything?

"Let's put it this way—say I'm driving through Montana with its 80-mile-per-hour speed limit and choose not to wear a seat belt. There's a chance I'll be fine but, if I do get in an accident, what's the likelihood I'll get hurt without a seat belt versus wearing one? We all know that my odds are not very good. I've loaded my possible injury by not having a seat belt and also by going 80 instead of 60."

Walden laughs. "It's not like you couldn't drive across Montana and be just fine but you're not as safe without a seat belt.

"So, this is definitely the way climate change works. Through past evidence of how the Earth has responded plus future climate modeling, we believe that as greenhouse gas increases and the planet warms, we're loading the dice for certain weather events to occur—like dry hot conditions in summer, more rain during winter, less snow, low sea ice, and of course, more frequent visits from the polar vortex."

feature

Good medicine

BY BRIAN CHARLES CLARK

As WSU trains Native American health-care providers and researchers, Western-style healthcare could be transformed by ancient, time-tested practices.

JOE FEDDERSEN, *PLATEAU FISH TRAP*, 2015, GLASS AND ALUMINUM, SPOKANE FALLS COMMUNITY COLLEGE (STAFF PHOTO)

After the War of 1877, Robbie Paul's grandfather was 10 when, along with six other children, he was shipped from the Nez Perce exile camp in Oklahoma to the new Indian boarding school in Carlisle, Pennsylvania. As her grandfather parted with his mother that day in 1880, mother said to son: go, learn what you can, then come back to us. And, Paul thinks, based on a healing dream she had, the boy's mother perhaps discreetly slipped a medicine bag into his coat, something to keep his feet on the same earth as hers.

In a photo Paul still has, her grandfather, posed with his few other Nez Perce schoolmates, has his hand inside his coat. She thinks he's clutching the medicine bag, holding on, in a sense, for dear life, and that kept him together, body and soul, for the years he was in boarding school. He did come home in July 1888, and he still spoke fluent Nez Perce.

Paul, too, spent time in a boarding school, as did her father before her. "In essence," she says, "I'm still healing, so that's what I speak about."

Paul, Washington State University's retired director of Native American Health Sciences, is writing a history of her Nez Perce family, and an exhibit of her family's archives—including her grandfather's trunk from boarding school days—opened at WSU's Manuscripts, Archives, and Special Collections in October.

The Indian boarding schools damaged generations of people with their philosophy of extreme assimilation. The system's founder, Richard Pratt, said, you have to "kill the Indian" in order to "save the Man." This pedagogy of oppression stripped multiple consecutive generations of North American indigenous people of their names, families, languages, stories, cultures, and land. Their medicine bags were outlawed, too.

Access, trust, and disparity

The trauma of centuries of systematic erasure is compounded by a deep disparity in the health-care available to Native people. Rural Americans already face a growing disparity in access, and the availability of physicians to many Native Americans, particularly in rural areas, is about half the national average. Access equity is one of the primary reasons that WSU founded its health sciences campus in eastern Washington.

Trust is another. "There are more than 500 treaties and virtually every one has been broken," community health researcher Dedra Buchwald says. Given the history of the relationship, Native Americans and Alaska Natives are understandably reluctant to trust Western institutions.

Researchers, in particular, must deal with a legacy of "helicopter science," Buchwald says: researchers drop into a Native community, collect the data they think is important, and then leave without so much as a thank you, much less a call-back with results.

Buchwald, a professor of community health and the director of IREACH, the Institute for Research and Education to Advance Community Health at WSU, says that's why "community-based participatory research is the coin of the realm." As tribes have become more empowered in recent years, health researchers now work with communities to learn what the communities want. Research, treatment, and intervention projects are conducted in collaboration with Native communities, and all data are shared with them.

But, as Paul points out, it's not just a matter of getting Native peoples to accept and trust in the ways of Western medicine. Researchers and providers need to respect the vast body of traditional knowledge that indigenous people have developed over millennia. She says health-care providers shouldn't just practice *on* a patient; ideally, they practice *with* the patient, by combining listening skills with cultural competency.

"We have our unique understanding of our health and our culture ways, and how to best listen to a patient," Paul says. "I strongly feel that we can listen to our own, and a lot of people don't have that understanding unless you are of our culture. You can have empathy, but I don't think you can have the full understanding. It's an issue of trust to be treated by one of your own."

Although outlawed for centuries, a new sense of respect and appreciation for traditional knowledge is dawning among researchers and practitioners of the Western tradition. Once again, the medicine ways of Natives are being embraced and, as WSU public health researcher Lonnie Nelson says, married to Western medicine to create better health-care for everybody.

Overcoming disparity through diversity

Nelson's heritage is rooted in the eastern band of Cherokee Indians, those who resisted relocation to Oklahoma. His mother was a nurse with the Indian Health Service: "We moved around a lot," living on or near reservations.

"Native Americans and Alaska Natives face a lot of health disparities that find their roots in settler-colonialism and the cultural genocide that has been visited upon our population over the past 200 years. For just about any condition you look at by outcomes and ethnicity, they'll almost always be worse for Natives," he says.

Nelson says it is "absolutely true" that having participation of Native practitioners and researchers will help reduce health disparities and improve access. He just took on the position of assistant director for special programs to grow Native initiatives at WSU's health sciences campus in Spokane. He plans to recruit Native high school students to come to Spokane for six to eight weeks at a time to work with health science researchers. "They'll see what it's like to work on campus and do research. They'll have that exposure to the reality that this is a possible career path for them.

"I am a product of a program very much like that," Nelson adds. "I was recruited by my tenth grade chemistry teacher and went to Northern Arizona University for a summer to do chemistry."

Janet Katz, a professor of nursing heavily involved with recruiting and retaining students from communities that are underserved in both education and health-care access, says that changing the admissions criteria for nursing, pharmacy, and medical school from strictly numerical to "mission-driven or holistic admissions" should help draw Native (and other minority) students.

"There's been a lot of research on this," she says. "The metrics we use, testing, GPA, have been the main admission criteria, but they don't necessarily tell you if you have someone with really good critical thinking skills or that they're going to serve a community and be a good practitioner. So there's been a move to use those metrics as a screening tool at the beginning, but also certain other criteria, such as life experience. And you base criteria on your mission: What kinds of students do you want to have and to produce? So we might look at what kind of providers we need for Washington state. Do we need more Spanish-speaking practitioners, more low income, more rural? We're going to do that in nursing next year. The College of Medicine already has that going."

Daryll DeWald, chancellor of WSU Health Sciences Spokane, affirms this idea: "We want to make WSU Health Sciences an enviable setting for American Indian and Alaska Native students who want to be health-care researchers and practitioners. One of the primary reasons that health disparities still persist in these populations is a shortage of Native physicians, practitioners, and researchers."

Katz points out that "everybody says we need more diversity among practitioners to provide quality healthcare, but is that really true? And why is that?" In fact, she says, quite a few studies over recent decades show that "ethnic congruence can really alter or affect the interactions that patients have." In other words, patients who work with practitioners of similar ethnicity, gender, and backgrounds have better outcomes. "That seems to me like a good grounding" and an important part of healing the disparity divide, says Katz.

The majority of health-care professionals, Katz adds, are white, and in nursing, white women. "So if we want to reflect the population, that needs to change. And that's what I've been involved in, to change that balance. I feel that education is a human right, just as health is a human right. And I don't want people to not go into healthcare because they grew up in a certain neighborhood or didn't have a family who could help them. That goes back to the whole idea of social determinants of health: people who are more educated tend to be healthier." And people who are more educated are often from more affluent families. "It all kind of ties together."

Part of the solution is role models. Seeing yourself as a doctor or a scientist is often contingent on seeing others like you in those roles. That's easy for white men; they dominate science, technology, engineering, and medical professions and are more likely to be portrayed in movies, games, and TV as filling those roles. Diversifying the medical and scientific fields

Opposite, from top: Nez Perce children at Carlisle boarding school—(*back, from left*) Jesse Paul, Charles Wolf, Samuel Johns; (*front, from left*) Dolly Gould, Rebecca Little Wolf. *Courtesy Smithsonian Institution*. ***This page, from top:*** Assistant professor of nursing Lonnie Nelson. *Courtesy WSU College of Nursing*. Robbie Paul, retired director of Native American Health Sciences. *Photo Melissa Ponder*

the genetics of trauma and more: magazine.wsu.edu/extra/trauma

requires careful thought; it's not just a matter of filling seats with faces of diverse hues. What emotional issues will first-generation, minority, or female students face? And how can we design a curriculum that not only empowers a diverse student body but also doubles as ways of ensuring that all gain some level of cultural competency?

Katz has an honors student who is conducting research on Na-ha-shnee, a WSU Health Sciences Spokane program founded by Paul that brings Native high schoolers to campus to experience facets of the health-care professions under the mentorship of WSU's diverse faculty.

"Participants had a huge commitment to going to college and going into a health career," Katz says of the students. "They were more confident about their emotional preparedness to go to college before they did the two weeks in Na-ha-shnee." After the on-campus experience, "they realized they would need a lot of support to be away from home, to study a lot, and to be around people who are different than them." Katz credits multicultural centers for supplying some of that support, as well as the growing number of Native mentors who are either from local tribes or members of the faculty.

"I got involved in this because of Robbie Paul," Katz says. "She was the first person on the health sciences campus to start advocating for Native students." Once that process takes off, it becomes a virtuous cycle: "You get people who go back into their communities. They've got a career, an education, and they become role models."

Paul says WSU is "seen as the leader" in regards to recruiting Native American and Alaska Native students. Since 1995, the efforts of Paul and her team resulted in 67 Natives graduating with bachelors of nursing degrees. And Buchwald's efforts have resulted in "the country's biggest and most successful program in regard to training Native researchers: 48 PhDs and MDs, with $200 million in grants."

After Paul retired, Naomi Bender, a Quechua from Peru by way of Minnesota, was hired as director of Native American Health Sciences. "Only nine or ten medical schools have a focus" on recruiting and training Native students, she says. WSU is joining that group. "Two Native students started in the fall 2019 medical college class." Because Natives tend to live more collectively than most Americans, Bender says, their inclusion in medical school not only "trains people, but moves and educates entire communities toward healthier outcomes."

Ways of Knowing

While training Native people in the medical professions and to conduct research in their own communities is critical to healing the health disparities they contend with, everyone could benefit by taking seriously the traditional knowledge of indigenous people.

As Nelson points out, "The word 'medicine' does not mean the same thing that it does to Western-thinking individuals. When Natives refer to medicine, they are referring to anything that has an effect on the way you feel: a story, a walk in the woods is medicine. A place may have bad medicine associated with it because someone took their life there. So medicine is not a substance. Western science has a lot to learn from the perspectives of indigenous people."

"Traditional knowledge," Buchwald says, "is based on approaches that Native people have been testing for thousands of years. Even though many of their traditional practices have not been vetted in randomized controlled trials, I do think there's valuable information, both in the methodology, *how* do you do something, as well in *what* you do. That value is just beginning to be explored."

Nelson, who uses talking circles in his intervention and harm-reduction research, explains that, growing up Indian, he "felt a cultural divide between the things I was raised to believe were true and possible and the Western conceptualization of humans: a reductionist, materialist paradigm that posits we are made completely of matter and there is nothing else to us."

In studying alternative and energy medicine, he discovered "some pretty interesting overlap with the Native worldviews in terms of the connectedness of everything, between people and plants and animals. If you know about those invisible connections, you can interact with them in a certain way that results in better health. And that's something that could have come out of a Reiki textbook or it could have come out of the mouth of a Native American elder. So I wanted to know if there is any empirical support for those beliefs and conceptualizations."

Opposite: Na-ha-shnee annually brings Native young people to WSU to experience healthcare with faculty mentors.
Below: Director of Native American Health Sciences Naomi Bender. *Photos Cori Kogan*

Nelson, along with his wife, WSU psychology professor Susan Collins, is beginning a harm-reduction project in Seattle with urban Natives with alcohol use disorders. Central to the project is the use of ceremonial talking circles led by Native healers. The hope is that using such time-tested ways of healing will enable participants to better manage their addictions.

What Nelson, Bender, Buchwald, and Katz are all doing, as Nelson says, is marrying the best of multiple health-care traditions. In parallel with that goal, the operating philosophy of WSU's health sciences programs is that all students should be trained to work interprofessionally.

Instead of narrow tracks for nursing, pharmacy, and doctors, everyone gets a good dose of their colleagues' working knowledge. This, too, is a kind of marrying of traditions and, in healthcare, of professions that have been segregated by gender: 75 percent of nurses, for example, are white while 90 percent are female; nearly 70 percent of doctors and surgeons are white. And although the percentage of female doctors and surgeons is increasing rapidly, males still earn, on average, nearly $100,000 per year more than their female counterparts.

Interprofessionalism not only tends to break down the traditional barriers for women and people of color, it also furthers another of WSU's emerging strengths: incorporating personalized medicine. Personalized, or precision, medicine requires mountains of data on everything from individual genomes and gut biomes to family health history, as well as the people and computing power to analyze and harness it to the betterment of patients. Rather than individual MDs making all or most of the decisions about a course of treatment, WSU's approach relies on an interprofessional team. The MD may still be at the center of care, using her expertise to guide her team, but in this emerging system patients are more likely to interact directly with health coaches. Coaches listen to their patients, establishing a relationship that has as its goal, as one expert in precision medicine put it, an overall state of well-being attained by preempting disease before it has a chance to manifest.

And this is precisely where at least some Native American traditions have been coming from for centuries. As Kenneth "Bear Hawk" Cohen writes in his book, *Honoring the Medicine*, healing and curing are not the same. Where Western medicine has traditionally sought to banish disease, indigenous healing seeks a restoration of "well-being and harmony."

"We're at a place where we need to think more about how we treat patients," Bender says. She says we need a better understanding of environmental and cultural factors because, as was her experience growing up among her Quechua family in Peru, "when you're living in a collective system with access to very few resources, there may be multiple diagnoses of different diseases because of the environment they're in. And we need practitioners to understand that, to have conversations and get to know their patients more. And I think we're getting there. But there's more that we can be doing."

"There's a group called the Transcultural Nursing Society," Katz says. "We're developing a survey for patients to judge whether their providers are culturally competent or not." A lot of what constitutes competency is not based on what actions were performed, but how decisions were made; culturally competent practitioners make decisions in tandem with their patients. "It could be any culture" where there is a possibility of a breakdown in communication, Katz adds. "Older people who have young providers," male doctors working with female patients, and so on.

Acceptance of new ideas, especially in something as critical as healthcare, is never easy. It happens in fits and starts. While some regions and institutions, like Washington state and WSU, blaze innovative trails, people in other regions remain skeptical.

When asked how he might persuade skeptics to accept the validity and wisdom of traditional knowledge, Nelson becomes very thoughtful before saying, "Anyone who has ever cried at a movie shouldn't have trouble understanding how a story can affect you. Anyone who's ever smelled a particular scent that brought them back to their grandmother's kitchen, shouldn't have trouble with the idea that burning plants and producing a particular smell in the environment could change the emotional state of people in that environment. Anyone who honestly applies their own experience to their understanding of what can be medicine and what has the ability to change the way that you feel, really shouldn't have any trouble understanding any of these concepts."

No one story can heal a broken system, no matter who tells it. As Bender points out, "We have a biased health-care system. There are tribal nations and voices that can help us move the dial" to heal our system. "And, as a land-grant institution, we should be doing that."

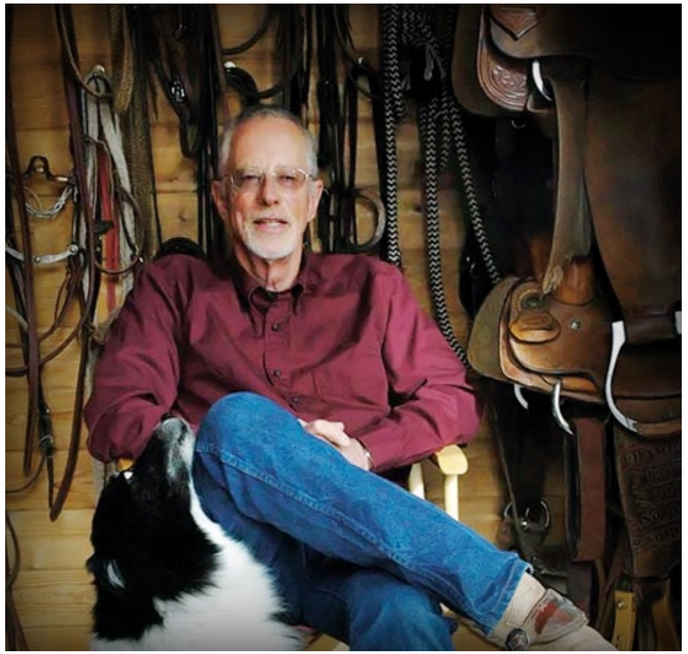
Paul says her father "always told me, 'We need to learn to listen, and to listen to learn.'" Native Americans greatly value silence and know there are more voices than just those of people. "My dad knew how to listen to birds to predict the weather," she says. "How do you do that?" she'd ask him. He'd chuckle and say, "You have to have a strong spirit guide, but you also have to learn to listen quietly."

As a paradigm for healing disparity, listening is certainly a good place to begin. "My father never preached, he just gave me a story," Paul says. "Ninety percent of healing is being listened to. You have to learn to listen so quietly that you can hear a bird taking a drink on the other side of the mountain."

Naomi Bender remembers childhood in Peru: magazine.wsu.edu/extra/Peru

ALUMNIpedia

SENIOR JAISSA GRUNLOSE NEAR NORTHSIDE RESIDENCE HALL ON COUGAR WAY IN PULLMAN. A MEMBER OF THE COLVILLE TRIBE, SHE IS PURSUING A MARKETING DEGREE, SERVING AS PRESIDENT OF THE WSU NATIVE AMERICAN WOMEN'S ASSOCIATION, AND IS CURRENT MISS PAH-LOOTS-PUU. (COURTESY JAISSA GRUNLOSE)



COURTESY DON WELLER

With a pencil or brush or horse

BY ADRIANA JANOVICH

"DOUG MAY AT WORK" (DON WELLER)

His canvases are mostly covered with cowboys and horses now, along with their accompaniments—saddles and chaps, barns and fences, cows, canyons, rivers, red rocks, ropes—all things he's loved from an early age.

Don Weller ('60 Fine Arts) worked for decades as an illustrator and graphic designer before making a second career of painting images of rodeos and ranches and, in a sense, getting back in touch with his roots. "Searching my earliest memories, I'm not sure I ever believed in Santa Claus, but I know I always believed in cowboys," he writes in *Tracks: A Visual Memoir*.

In his new, 200-page book, Weller details his artist's life through original works, a color-coded timeline, and vignettes divided into three parts: Making Marks, Having Adventures, and Leaving Tracks. He describes his childhood and college days in Pullman; his early career designing posters, advertisements, and record and magazine covers in Los Angeles; and his return to the countryside with a move to Utah. "My life began shy and unsure, with narrow interests, spending many hours alone with a pencil or brush or horse. And that is still me," he writes.

Weller grew up in the rural West in the 1950s—"at 416 Illinois Street, at the corner of Monroe, on the north side of College Hill," to be precise—and fondly remembers sledding down Monroe Street in winter and fishing at Twin Lakes in summer. His dad, Harry C. Weller ('23 Arch. Eng.), taught architecture at Washington State College and, the artist writes, "since the town was so tied to the college, enrolling there was just the natural order of things."

Initially, Weller aimed to become a veterinarian. "I thought that's what you did if you wanted to be a cowboy and your dad didn't own a ranch," he says. "When I was a little kid,

view more of Don Weller's art: donweller.com

before high school even, I found out where the college rodeo club practiced, and it wasn't too far from our house, probably two miles away. I rode my horse there and watched them. Pretty soon they showed me the ropes. When I got to college, as soon as I signed up for my classes, I signed up for rodeo club."

He quickly learned he preferred riding and drawing to taking science classes and switched his major. WSU drawing teacher Ed Poulsen was a great influence. "He told our class if you wanted to learn to draw, you better carry a sketchbook everywhere you go and use it. Because of him, I carried a sketchbook for the next 30 years and filled tons of them. I would draw in airports if I was traveling. I would draw people in meetings. I would draw everywhere, draw, draw."

But, he writes in his memoir, "Without someone to write checks, art is just a hobby." So, after graduation, Weller sold his horses, moved to Southern California, and spent the next several decades doing graphic design and illustration. "The spirit in LA's best design offices was competitive, and far from 9 to 5," he recalls. "We wanted interesting creative solutions for our clients and worked night and day to produce them."

Weller became known for his creative ideas and visual solutions. Eventually, he started his own design firm and created posters for the Hollywood Bowl, Rose Bowl, National Football League, and 1984 Olympic Games. And he did some part-time teaching too—three years at UCLA and 11 years at the Art Center School in Pasadena.

The '60s and '70s were "an intoxicating time for West Coast designers," Weller says. "Clients were realizing the merits of good effective problem-solving design and were willing to pay for it. We treasured good clients and competed for them. Graphic design was coming into its own all around us, a golden age. In New York and LA, design was developing its sophistication in a clean, corporate way, but on the West Coast we also had Hollywood and the entertainment industries that needed more flamboyant, innovative, and colorful solutions. That was our challenge, and we loved it."

Weller also created five stamps for the United States Postal Service, illustrated three children's books, and published several art books in addition to his recent memoir. His work has appeared in magazines from *Time* and *TV Guide* to *Reader's Digest*, *Sports Illustrated*, and more. He's also exhibited his art from Arizona and California to Texas, Utah, Montana, and Wyoming.

"Looking back, my interest all the way through has been drawing and ideas," he says, noting he's thoroughly enjoyed both of his careers, first producing art for commerce and now painting images of the West. After the cement and palm trees of Southern California, he says he's glad to be horseback again, among cowboys and cutting horses.

Home is Oakley, Utah, about seventeen miles northeast of Park City, where he lives with his wife Chikako, known as Cha Cha. Weller still paints "pretty much every day," some days as long as ten hours. He uses watercolors or oil paints to capture the same images that intrigued him as a young boy on the Palouse. "I kind of feel time is running out," he says. "The last few years, I've had this really strong urge to paint."

Clockwise, from left: Chili competition poster; Weller cutting a buffalo; "Cowboy Church"; "When the Sun Hits the Saddle"; Cover of *Time* magazine, July 7, 1975, designed by Weller. *Courtesy Don Weller*

Reporting from the hard path

To help tell the story of refugees fleeing Venezuela on foot, Andrea Castillo walked with them.

COURTESY ANDREA CASTILLO

It took five days to trek from Cúcuta, just over the border in Colombia, to the sprawling city of Bucaramanga, which sits on a plateau in the widest branch of the Colombian Andes. Castillo ('12 Comm.) hiked more than half of the 120-mile route earlier this year, stopping for just one meal a day—and losing seven pounds in the process.

Making that journey, she says, was one of the most important things she's ever done.

Since graduating from the Edward R. Murrow College of Communication at Washington State University, Castillo has also investigated substandard housing, covered the aftermath of an earthquake, and written about stateless children born to Venezuelan refugees in Colombia. Her reporting has taken her from Pullman to Portland, Oregon, and Fresno, California, as well as Mexico City, and beyond.

But, she says, "I didn't grow up reading newspapers or really paying attention to the news. I always knew I liked to write, but I didn't see it as an option. I don't know if I saw my community in the paper."

Castillo was raised by a single mother in Seattle and the northern suburb of Edmonds. Her mother came to the United States from Venezuela, and Castillo grew up speaking both English and Spanish at home. Today, her fluency in both languages helps her cover stories on the immigration beat at the *Los Angeles Times*, balancing breaking news with long-term reporting projects.

At WSU, she worked for *The Daily Evergreen* and studied abroad twice, writing for *The Times of India* during a six-month stay in 2011 and managing social media accounts and translating blog posts for a human rights nonprofit in Ecuador the year before that. In spring 2012, just before graduation, she also participated in a "backpack journalism" project in Nicaragua.

These experiences helped her realize "I wanted to write about social issues and the experiences of immigrants and people of color in the U.S. I wanted to represent people like my mom, who I never saw reflected in the pages of the newspaper, and to write about communities I myself am part of."

Castillo credits Clinical Associate Professor Ben Shors with encouraging her to pursue those goals. "He's such an advocate for students," she says, noting Shors also helped her see the value of networking, importance of making your own opportunities, and "finding somebody who supports you. You really only need one mentor. I had one. It was Ben."

Shors says, "Andrea was a fearless student, willing to tackle topics and dig into issues both on campus and abroad. Her work is a gold standard for Murrow students, combining brilliant journalism with social conscience and deft analysis."

Castillo landed an internship right out of college at *The Oregonian*, where she covered immigration and Latino issues as well as education and several small cities. She stayed on for several months as a full-time staffer before moving to *The Fresno Bee*, where she specialized in immigration and LGBTQ issues. A special project on substandard housing caught the attention of a *Los Angeles Times* editor, who recruited her for the newspaper's metro desk.

Seven months later, the Puebla earthquake struck, injuring more than 6,000 people and killing 370, including 228 in Mexico City. Castillo landed there the morning after the quake. "I think I worked twenty hours that day," she says. "It was really, really emotional."

Also emotional: covering the story of a father detained by federal immigration authorities while dropping his daughters off at school. His arrest was filmed by his then-13-year-old daughter; the video went viral. Castillo followed the family's story for a year.

When we met at a coffee shop in Inglewood, northeast of the newspaper's new offices in El Segundo, she was—among other things—looking into sexual abuse in detention centers in California.

Stories like these, she says, give her a chance to grow her investigative and narrative skills as well as work on what hooked her on journalism in the first place: documenting history as it happens and speaking truth to power.

While it's still early in her career and she's happy where she is—"I love LA. I love the West Coast"—someday, she says, "I would love to be a foreign correspondent."

read some of Andrea Castillo's recent work: magazine.wsu.edu/extra/Castillo-articles

watch Clark Pederson in action on *Deadliest Catch*: magazine.wsu.edu/extra/deadliest-catch

Reel deal: Clark Pederson of *Deadliest Catch*

BY ADRIANA JANOVICH

Asking the captain for permission to marry his daughter—on camera, in the wheelhouse, during season thirteen of Discovery Channel's *Deadliest Catch*—was nerve-wracking, but it wasn't his scariest moment aboard the *Northwestern*.

That distinction goes to a "really bad" storm during his second season on the boat, says Clark Pederson ('10 Comm.). "We have to put chains over the top of the pots to hold them down. You're on top of a 35-foot stack, and waves are 45 feet, and everything's frozen up there. It's a big skating rink on top of the pots, and the boat's in the middle of a storm. It's definitely scary."

But, "there's no time to sit and think about it. If you're worried about getting hurt that's when problems happen. There's no time to second-guess yourself or be soft."

After graduating from WSU Pullman, Pederson worked as a deckhand and captain-in-training on the Columbia River and aspired to be a maritime pilot, helping ships navigate the waterway's hazardous bars, shoals, and currents. He earned his third-mate unlimited license at the California Maritime Academy, where he met his future wife, Mandy Hansen Pederson, already a regular on *Deadliest Catch* aboard the *Northwestern*.

She practically grew up aboard the boat, owned by her adopted father, celebrity crab-boat captain Sig Hansen, and his younger brothers, Norman and Edgar. "I'm extremely lucky to be working with my family," she says. But, "if something were to happen with the boat, the majority of our family would be gone. Everything's on the line out there. It's a matter of life or death."

COURTESY MANDY HANSEN/INSTAGRAM

Pederson joined the crew as a greenhorn, or novice deckhand, in 2016, and wed the captain's daughter a year later. Their marriage proposal and Norwegian-style wedding—in front of the *Northwestern* docked at Seattle's Pacific Shipyard—were part of season thirteen. Season fifteen of the Emmy Award-winning show aired earlier this year.

Summers, the crew fishes for salmon. Fall and winter, it's several kinds of crab. They're generally at sea about three months at a time. That first season aboard the *Northwestern*, Pederson says, "I fell in love with fishing. I was totally drawn to boat life. It's an adventure. Not many people get to say they go up to the Bering Sea and fish. While I'm a young enough man I want to be on deck, but the end game definitely is to be in the wheelhouse and run a boat."

Meantime, the *Deadliest Catch* cameras took a little getting used to. "At first, you're very conscious of them being there," Pederson says. "But that goes away fast. I mean, you want to do well on camera for your friends and family watching. I feel humbled and proud to be doing that. But you focus on your work. That's why you're up there, and it's a dangerous job."

Working with his wife and her family adds "another level of stress for me," he says. "You want to perform at a high level so your wife is proud of you and your father-in-law is proud of you. It makes you step up."

When they're not working aboard the boat, the young couple makes their home in Washougal, where "it's a little slower and quieter, and we enjoy that." He hails from Vancouver, and had "heard great things" about WSU's Edward R. Murrow College of Communication. He was also drawn to Pullman's "college-town atmosphere" and Greek life. He was a member of the Delta Tau Delta fraternity and served as recruitment chair.

Since graduating, he's been back to Pullman to attend a few football games and credits WSU with giving him a strong foundation. "It wasn't just the education I got at WSU; it was the friends I made there and my interactions outside the classroom," he says, adding his experience at the University "made me want to strive to be successful."

read more student regent profiles: magazine.wsu.edu/extra/student-regents

Student regents: Where are they now?

BY ADRIANA JANOVICH

It's been 20 years since the state legislature created the student position on the Board of Regents, Washington State University's governing body.

It's a big deal; the 10-member board, appointed by the governor, sets policy and provides guidance for University administration. the student regent holds the same voting rights and responsibilities as other regents—with only one exception: personnel issues.

"Having a student voice on the Board of Regents is invaluable," says Governor Jay Inslee. "Student regents act as advocates for their peers, they represent the students' needs and concerns, and are also able to communicate the regents' decisions to students. Student representation is crucial to the institution's leadership and governing."

The governor selects the student regent from three to five finalists recommended by the governing body of the Associated Students of Washington State University (ASWSU). Regents attend four meetings and two retreats each year.

"We're always trying to serve the state better, and I think we do a better job if we have a diversity of expertise, life experiences, and viewpoints represented on the board," says WSU President Kirk Schulz. "That's why it's so important to have student regents. They offer a valuable perspective—and often great ideas—to board conversations that no one else can offer."

The first student served for the 1998–1999 academic year. Two decades later, *Washington State Magazine* connects with alumni to reflect on their time on the board.

JANELLE MILODRAGOVICH

Kirkland, Washington
1998–1999

When she was a junior—and ASWSU chief of staff—at WSU Pullman, Janelle Milodragovich ('99 Poli. Sci.) made a bid for ASWSU president at the same time candidates were being sought for the first student regent. She applied for the new position "not really knowing what it was about." While she didn't win the election, she was appointed to the board by then-Governor Gary Locke. She also eventually married her running mate, would-be ASWSU Vice President Nate Brooling ('98 Comm.). "The joke we have is that we might not have married if we actually

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Jack Thompson '78 Tony Thompson '09

had won the ASWSU election," says Milodragovich, CEO of Ten Gun Design, a full-service creative agency in Edmonds.

Her term started on the heels of a riot on College Hill, where two dozen law enforcement officers were injured attempting to disperse a crowd of about 200. Milodragovich lived around the corner from where the incident—believed to have been sparked by WSU's policy against on-campus drinking—took place. "From my first board meeting, the regents sought my input on student perspectives and systematic changes to address underage drinking on campus," she says. "Even though I was just 20, I had a unique viewpoint on aspects of school governance that wasn't previously represented on the board. They were all professional people with significant business experience. And, from a personal perspective, being able to work with women who had a strong presence at the table was incredibly impactful."

During one dinner, she was seated between WSU's then-President Sam Smith and Microsoft cofounder Paul Allen, who had attended WSU and was receiving the Regents' Distinguished Alumnus Award. "I cannot tell you what we ate, but we had a wonderful conversation about the Seahawks, (their then-new coach) Mike Holmgren, and online chess," says Milodragovich, who went on to attend law school at the University of Washington, then work as an attorney specializing in labor-management litigation. "I really had to pinch myself at multiple points."

COURTESY JANELLE MILODRAGOVICH

COURTESY DERICK EN'WEZOH

DERICK EN'WEZOH
San Francisco, California
2008–2009

"Serving on the board, I learned anything is possible with hard work and dedication," says Derick En'Wezoh ('10 Neurosci.), who earned his MD at Harvard Medical School and MBA at Stanford University. "If I hadn't served on the board, I'm not confident I would've had the mindset to subsequently run for student government or apply to Harvard or Stanford. It wasn't a trajectory I thought would be attainable; I'd likely be living a very different life."

Born and raised in Tri-Cities, En'Wezoh served on the board his junior year and was ASWSU president his senior year. His tenure followed the murder of his cousin in the Virginia Tech massacre, and student safety became one of his top priorities. "That year we started Safe Walk, a program which dispatched a group of students in orange jackets to take you where you wanted to go. We expanded Women's Transit. We installed blue emergency light boxes everywhere on campus. We offered self-defense and safety courses. We went on a mission to try to improve sidewalks and lighting on College Hill. We started a banquet to raise money for different safety initiatives on campus. We accomplished a lot."

En'Wezoh remembers then-President Elson S. Floyd telling him, "'You may only have one vote, but you have an infinite power to persuade.' I'm quite lucky Dr. Floyd and WSU prepared me so well. Those years were incredibly instrumental in shaping me to be who I am today. Looking back, I am incredibly lucky to be a Coug . To be a Coug is to be part of a remarkable community."

NAREK DANIYELYAN
Vancouver, Washington
2016–2017

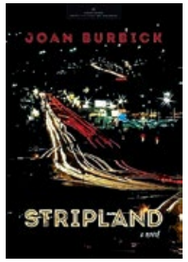
"I had a unique experience because I was a transfer student, a student of color, a first-generation student in the United States—and I felt like I could do a lot of good," says Narek Daniyelyan, director of strategic initiatives at Workforce Southwest Washington ('12 Hum. Dev., '19 Poli. Sci.).

Daniyelyan is Armenian. He came to America in 1992 when he was four, first settling in the greater Los Angeles area, then moving to Vancouver in middle school. He transferred from Clark College. As an undergrad, he was vice president of the Associated Students of Washington State University Vancouver (ASWSUV). As a graduate student on the same campus, "I felt like I could bring a different perspective to the board."

During his tenure, he visited WSU Pullman, WSU Spokane, WSU Tri-Cities, and WSU Everett. "The common theme among all of the campuses was a need for additional resources outside the classroom to help students get through their education journey, whether they be mental health, healthcare, tutoring, veterans' support—whatever it may be—so students have an equitable opportunity to get their degree. There are some students who have the privilege of getting through a system with relative ease, students that don't have to worry about tuition checks bouncing or going back to their dorm and not having food to eat or not having to worry about healthcare." Other students struggle with basics, and, Daniyelyan says, "that's really the voice I was trying to bring to the board."

COURTESY NAREK DANIYELYAN

NEWmedia



Stripland
JOAN BURBICK
REDBAT BOOKS: 2019

A Nez Perce man, a hoop dancer, is shot and killed on the reservation in remote, rural Idaho by a state trooper.

A homeless white man lugs a thick rope, one end dragging like a tail and anchoring him to a fragile earth that is wracked by instabilities in the magnetosphere. He once had a friend who could have helped him deal with the magnetic waves—but that man was shot dead.

The man with the rope is trying to walk back up steep Twenty-first Street in Lewiston, Idaho, to where it turns into Thain. There's a pawnshop there, where a corn doll in a glass case speaks to him; she knows things. When he gets there, the doll is gone. Dave, the owner, says she wouldn't shut up, so he hid her.

A lawyer of impossible cases is trying to find the man with the rope before the cops do. If she gets to him first, there's a chance she can get him back into the mental health system. She finds more than she expects in the pawnshop: a trove of looted Nez Perce treasure.

A retired newspaper photographer loves the Nez Perce hoop dancer and has spent a fortune on internet curses damning the cop who shot him, and the rest of Lewiston, too. When she learns the man with the rope might know something, or have seen something, about the last minutes of her love's life, she, too, sets out to find him.

Then there's the paranoid hacker, wannabe writer, and real-life internet troll who cherishes "the intimacy of insult." He steals the dash-cam video of the shooting and puts it on YouTube, where it sets off a racist firestorm.

This is life in novelist Joan Burbick's *Stripland*, the steep stretch of road that slices up the valley from the Snake River to the Nez Perce reservation. This candy-store of Idaho characters—alive with Burbick's eye for telling detail—are all connected. But the real heroes of this moving and beautiful first novel are a couple of tween girls and their wise and pragmatic Nez Perce aunties. They lead this whole grief-mad crew back to the reservation, to the waters of the Snake—and to some sort of state of grace and healing.

Burbick has brushed up against the story of the shooting death of Randall Vernon Ellenwood with butterfly wings—and churned up a storm. Burbick spent decades as a professor of English at Washington State University on the Palouse Prairie—on Nez Perce lands—just north of the Lewiston

Amazing Legacies

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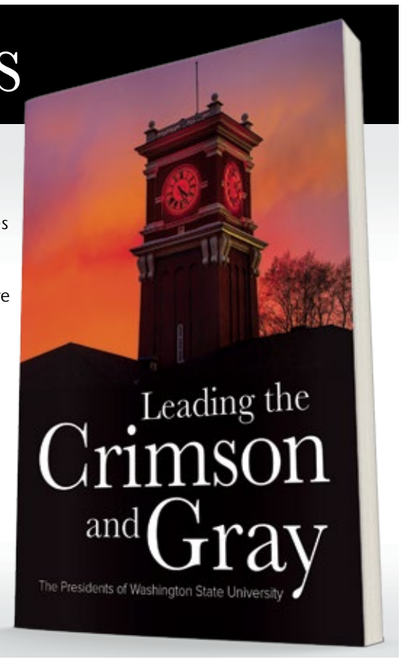
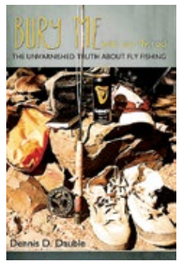


Valley. She researched gun culture and the ways in which violence and trauma shape us. Now writing novels, Burbick is at once a poet telling stories, a dancer running interference so that the true and the good may pass, and a sculptor of mirrors, making us look at the magnetic fields that entwine us, human and nonhuman beings all.

—Brian Charles Clark



Bury Me with My Fly Rod: The Unvarnished Truth About Fly Fishing

DENNIS D. DAUBLE '78 MS BIOL.
FISHHEAD PRESS: 2019

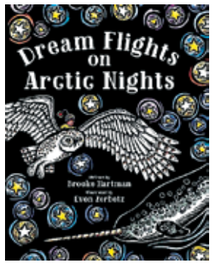
Dennis Dauble and his fly-fishing friends shun expensive gear and guided tours in favor of no-frills, self-planned excursions, which he details—often with humor, much of it self-deprecating—in his latest book.

This 214-page, softbound collection of short stories takes readers along on his fly-fishing trips from the South Fork of the Walla Walla and North Fork of the Umatilla to the Hanford Reach, along the Deschutes, Yakima, and Snohomish rivers, and beyond—ending with a fly-fishing trip to Scotland.

Dauble—a former fisheries scientist who also teaches fish ecology, biology, and management at WSU Tri-Cities—reminisces like he's talking with an old friend, a long-time fishing buddy. His forthright writing style makes for an easy and fairly fast read, one fellow fly-fishing enthusiasts might want to bring on their next trip to the cabin or camping trip—along with their rods, of course—for inspiration, even recipes. Dauble includes an ode to peanut-butter-and-jelly sandwiches along with recipes for pan-fried rainbow trout, smoked steelhead, whitefish caviar, Scottish oats with whiskey and cream, and Mom's Huckleberry Cream Pie.

He also discusses going fly fishing as a boy with his brothers and Grandpa Harry as well as later taking his own son and—these days—the grandchildren. Sometimes, he goes solo. Other times, he goes with his wife, who once noted, "You forget everything except every fish you ever caught."

—Adriana Janovich



Dream Flights on Arctic Nights

ILLUSTRATED BY EVON ZERBETZ '82 FOOD SCI., WRITTEN BY BROOKE HARTMAN
ALASKA NORTHWEST BOOKS: 2019

The deep desire to fly inspires a child's Alaskan dream in this lushly illustrated rhyming book. Animals across the Arctic landscape—wolves, ptarmigans, grizzlies, narwhals, salmon, otters, and eagles, among others—greet the dreamer on the nocturnal passage. The path leads to the northern lights, until sunrise when the raven guide takes the child home.

The simple rhymes match well with the linocut illustrations by Zerbetz, whose thick lines give dimension to colorful stars and beasts. The images seem to leap from the page, or fly in the case of owls, eagles, puffins, and ravens. A personal favorite: the two-page image of a floating mother and baby otter with their feast of clams.

Ketchikan-based artist Zerbetz has illustrated a number of children's books, including *Blueberry Shoe*, *Little Red Snapperhood*, and *Ten Rowdy Ravens*. Her creative work was featured in the in-depth study of raven ecology, *Dog Days, Raven Nights*, by John and Colleen Marzluff, as well as in public art across Alaska.

—Larry Clark

BRIEFLY NOTED

Race across America: Eddie Gardner and the Great Bunion Derbies

CHARLES B. KASTNER '81 MA HISTORY
SYRACUSE UNIVERSITY PRESS: 2019

In two epic footraces across America in 1928 and 1929, Eddie "The Sheik" Gardner, an African American runner, withstood daily death threats, intimidation, and Jim Crow laws to compete at the highest levels of the new sport of trans-America racing, and on the way became a civil rights hero and a symbol of hope and pride for his courage. Kastner, a long distance runner himself, spotlights Gardner's astounding athleticism, achievements, and struggles through sharp historical detail.

Mabel's Eyes

BONNY LAYTON '82 NURSING
CHRISTIAN FAITH PUBLISHING: 2019

Mabel, the main character in Layton's novel, faces tragedy and turmoil first in her own family, and again as she grows older with her best friend. Despite the trials and heartbreaks in her life, Mabel's Christian faith enables her to find purpose and eventually to give back to her little Indiana town and honor her friend's sacrifice.

Fabric of a Generation

TASHA MADISON '03 COMM.
2019

Miranda is a truant teen who'd rather be at the magic shop than home or school. Her little brother annoys her. So do her parents, who always seem to be bickering. She dreams of disappearing. And, when she finds a magical shawl in the attic, she gets her wish only to discover what she really wants is to find her way back home. In this historical fantasy novel for young adults, a teen bounces through time—learning lessons about life, family, and—ultimately—herself. Tasha Madison's debut is full of adventure, warmth, and relatable family relationships.

Cougar VI is Here

In true Cougar Spirit, the latest release of the WSU Alumni Association's Cougar Collectors' Series is a little extra special. Cougar VI is a hand-crafted Cabernet Sauvignon from the dedicated Cougs at Canoe Ridge Winery, and you won't want to miss it! Find a retailer near you or purchase a bottle online at alumni.wsu.edu/CougarVI.

If you want even more great Cougar-connected wine, join the WSUAA's Wine-By-Cougars, the official wine club for Cougs. Supporting student scholarships and alumni wineries? We'll toast to that.

ALUMNI ASSOCIATION

PHOTO MELAINE WILLIAMS

LAURA MOORE '08 entered on a whim, beat the cowboys, and took home the top title.

The Washington State University equestrian coach bested the second-place finisher by 5 seconds, riding the mechanical bull at Spangle, Washington's Harvester Restaurant for 57 seconds during its recent mechanical bull riding "world championship."

The contest was inspired by the 1980 film *Urban Cowboy*.

Moore, of Moscow, Idaho, grew up riding horses. "I signed up thinking I could probably win something. But I didn't expect to win the whole thing, especially when I saw professional cowboys and rodeo clowns," she says.

Fourth-place finisher Kyla Gabriel '16 rode for Moore at WSU, where Moore specializes in English-style riding.

Moore won the $4,000 grand prize, plus $500 for getting to the top 10 and a commemorative belt buckle naming her the mechanical bull riding champion of the world. She's planning to defend her title next year.

BY ADRIANA JANOVICH

60

Texas A&M AgriLife Research physiologist **RON RANDEL** ('65 Ani. Sci.) has retired after 45 years of beef cattle research and teaching. **DENNIS HEFNER** ('69 MA, '72 PhD Econ.) has been named interim president of the State University of New York (SUNY) at Fredonia. Hefner had served as president of SUNY Fredonia from 1997 until his retirement in 2012. Yakima County Commissioner **MIKE LEITA** ('69 Mktg.) will retire at the end of the year, a year before his term is up. He was elected to four-year terms in 2005, 2009, 2013, and 2017.

70

KEVIN HEIMBIGNER ('71 Acc., '73 Ed.) has been inducted into the Washington State Baseball Coaches Hall of Fame. **MARGIE J. REESE** ('71 Speech & Hearing Sci.) won the Selina Roberts Ottum Award at the Americans for the Arts 2019 Annual Convention in Minneapolis. Registered dietitian nutritionist **TERRI J. RAYMOND** ('71 Home Econ.) is the 2019-2020 president of the Academy of Nutrition and Dietetics. **WILLIAM "BILL" HYSLOP** ('73 Poli. Sci.) has been sworn in as the U.S. Attorney for the Eastern District of Washington. He held the same role from 1991 to 1993 and served as president of the Washington State Bar Association from 2015 to 2016. Seahawks Vice President of Community Outreach **MIKE FLOOD** ('74 Ed.) was inducted into the Pacific Northwest Football Hall of Fame. **CONNIE KRAVAS** ('74 PhD Ed.) has retired as senior vice president for university advancement from the University of Washington. From 1981 to 1999, she directed WSU's development efforts, including a comprehensive fundraising campaign which raised $275 million. Kravas was named a WSU "Woman of the Year" in 1996, and received the WSU Alumni Achievement Award in 1997. She received the 2019 E. Burr Gibson Lifetime Achievement Award from the Council for Advancement and Support of Education. Avino Silver & Gold Mines Ltd. has appointed **RONALD ANDREWS** ('77 Hort.) to its board of directors. PS Business Parks has elected **STEPHEN W. WILSON** ('79 Acc.) to its board of directors.

80

DAN PETERSON ('82 Hist.) was recently named vice president for development at the University of Washington. He also serves as president of the UW Foundation, leading UW's $5 Billion campaign. **DAVE WILSON** ('84 Hotel & Rest. Mgmt.), founder and owner of Destination Temecula Wine Tours and Experiences, recently celebrated the company's twenty-fifth anniversary. Protagonist Therapeutics, Inc. has appointed **DON KALKOFEN** ('85 Acc.) as chief financial officer. **TIM NICHOLS** ('86 Ag., '93 MCE Adult Ed.) is the new dean of the Davidson Honors College at the University of Montana. **JOHN STEACH** ('86 Chem. Eng., '05 MBA, '11 EdD) has been named CEO of the Center for Educational Effectiveness. Steach has 23 years of experience in public education. **GREGG HARPER** ('87 Hotel & Rest. Mgmt.) is the new general manager at the Woodlands Resort in Houston, Texas. **KRISTIN BAIL** ('88 Geol.) is the new supervisor for the Okanogan-Wenatchee National Forest. **DARRIN BELTON** ('88 Hort.) is the new business development director at Stemilt Ag Services. He's also a board member of the Washington Apple Education Foundation, the Yakima County Horticultural Pest and Disease Board, and the Zillah School District.

90

GEORGETTE REED ('90 Comm., '91 Sport Mgmt.) is being inducted into the Regina Sports Hall of Fame. She competed in the Olympics, Pan American Games, Commonwealth Games, Francophone Games, and World Masters Games, and was a throws coach for athletes who represented Canada at various international events. **LINDA FINEMAN** ('92 DVM) is the new CEO of the American College of Veterinary Internal Medicine. **DARR KIRK** ('92 Crim. Jus.) is Kelso's new police chief. He began his 26-year career with the Kelso Police Department in 1993 and has served in nearly every law enforcement role in the department. **ANDREA LUOMA** ('92 MA Comm., '99 PhD Higher Ed. Admin.) has been selected as top organizational consultant of the year by the International Association of Top Professionals. **CAPE POWERS** ('93 Civ. Eng.) is the new director for the Peoria Arizona Water Services Department, where he oversees more than 90 employees and a $38 million budget. Rhode Island Office of Revenue Analysis Chief **PAUL DION** ('94 PhD Econ.) has been named to the New England Public Policy Center advisory board. Mereté Hotel Management has selected **TERRY GOLDMAN** ('94 Hotel & Rest. Mgmt.) as vice president of operations, overseeing 16 hotels as well as two hotel projects in development. Former South Kitsap High School teacher and coach **DAVE GOODWIN** ('94 History, Ed., Soc. St.) has returned to the school as its new principal. **ANGELA JONES** ('94 English, Ed.) is the new CEO at Washington STEM. Cloud5 Communications has hired **TARA DEAN** ('95 Biol.) as director of business development. **PAUL BARRETT** ('96 Sport Mgmt.) is the full-time assistant coach for throwing events at Chadron State College. He retired from coaching at the University of Wyoming in 2017 after 23 seasons as the throws coach and associate head coach, with stints at the University of Kentucky and the University of Colorado in between. Moses Lake High School has hired **LIZ BIGGER** ('96 Busi.) as head girls' soccer coach. She's also employed as a trooper and K-9 handler and instructor with the Washington State Patrol. After 14 years in marketing at the Spokane County Fair and Expo Center, **ERIN GURTEL** ('97 Comm.) is now the fair director. Gurtel replaces **RICH HARTZELL** ('71 Ani. Sci.), who worked at the fair for 13 years, spending 8 as director. Aqua

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CLASS*notes*

Metals appointed **FENG HAN** ('97 PhD Crop Sci.) as its vice president of licensing and pricing. Registered nurse **TAMARA POWERS** ('97 Nursing) has joined Sutter Davis Hospital as chief nurse executive. **ROBERT BRUEGGEMAN** ('98 Genetics & Cell Biol., '04 MS, '09 PhD Crop Sci.) is WSU's new R.A. Nilan Endowed Chair in Barley Research and Education.

00

BILL WISNESKI ('00 MA Comm.) won three Pacific Southwest Emmy Awards for his new documentary *Shattered Dreams*, which examines sex trafficking in America. His last film, *Shadow of Drought: Southern California's Looming Water Crisis*, was recently broadcast nationally on PBS. **NATHAN MOULTON** ('02 Busi.) was named to the National Center for American Indian Enterprise Development's 40 under 40 list for 2019. He's a member of the Confederated Tribes of Colville Indian Reservation and serves as executive director of the Yakutat Tlingit Tribe in Yakutat, Alaska. **WES HENRICKSEN** ('03 Busi.) has been promoted to associate professor of law at Barry University in Orlando, Florida. **JOEL FRANCIK** ('04 Mgmt. Info. Sys.) has been chosen as the new principal at Central Elementary School in the Ferndale School District. Former WSU and NFL quarterback **RYAN LEAF** ('05 Hum.) has been hired by ESPN as a college football analyst. Leaf will call games mostly on ESPN2 and ESPNU. He worked for Pac-12 Networks last season and has been cohosting a show on SiriusXM's Pac-12 channel. **JOSHUA HARGROVE** ('06 Hosp. Busi. Mgmt.) is the new general manager of Prince Waikiki. **MEAGAN LOWERY** ('06 Soc. Sci.) is the finance and information services director for the city of Battle Ground. **NICOLE BROUILLARD** ('07 Soc. Sci.) is the new head women's volleyball coach at the University of Antelope Valley. **JADE REDINGER** ('08 Comm.) is joining KUTV, the CBS affiliate in Salt Lake City, Utah. She previously worked at KAPP-KVEW in Yakima and Tri-Cities as well as KNDU in Tri-Cities and KHQ in Spokane.

10

CONNOR AMES ('10 Neurosci.) has joined Dentistry Northwest in Port Hadlock. **AVIMANYU DATTA** ('11 PhD Busi.) is the new director of the George R. and Martha Means Center for Entrepreneurial Studies at Illinois State University. Johnston Architects has hired **KIERAN MCGUIRE** ('11 Arch.). Hawai'i Community College Chancellor **RACHEL SOLEMSAAS** ('11 EdD) is among 15 people selected for the Omidyar Fellows Program for mid-career leaders. Lynnwood High School has hired **CASEY TUCKER** ('11 Sport Mgmt.) as its new boys' varsity basketball coach. Moffat County United Way in Craig, Colorado, has hired **GENEVIEVE YAZZIE** ('11 Fine Arts) as the new community impact coordinator. **ERIC FOSS** ('13 Civ. Eng.) is an engineer intern at Allied Engineering Services. **SAMUEL SANCHEZ** ('13 Civ. Eng.) recently joined the Lochsa Engineering Idaho team. Miller Nash Graham & Dunn has hired **ERIC ROBERTSON** ('14 Fin.) as a benefits attorney. SRG Partnership hired **MARIANETH BECERRIL PEDRAZA** ('16, '17 MA Arch.) as a designer. **ABEL SABA** ('17 Nursing) held free medical clinics and distributed two tons of rice to people in need in his native Burkina Faso over the summer. Saba and **DAVID ONI** ('19 PhD Nursing) worked with volunteers from Nigeria, Ivory Coast, and Burkina Faso, along with a local physician, to treat 2,000 people in a week. After an internship covering the state legislature for *The Spokesman-Review* in Spokane, **RYAN BLAKE** ('19 Comm.) is now covering politics and education at the *Times-News* in Twin Falls, Idaho. **JENNIFER POWER** ('19 Comm.) has joined the *Wake Up Montana* ABC FOX Montana team in Missoula, Montana.

IN*memoriam*

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PAMELA LOVE ('41 Poli. Sci.), 102, June 25, 2019, Bellevue. **BETTY JANE KECK** ('42, '48 MS Phys. Ed.), 100, December 30, 2018, Edmonds. **KATHRYN CALLITIA MCCALLISTER CURRAN** ('44 Phys. Ed.), 96, May 18, 2019, Post Falls, Idaho. **NORENE E. BONY** ('45 Home Econ.), 94, March 8, 2018, Southlake, Texas. **FRANCES C. GIFFEY** ('45 Socio.), 95, October 6, 2018, Centralia. **RUTH MARTHA NEWHOUSE** ('45 Home Econ.), 90, April 8, 2012, Mabton. **MARION S. (ALLEN) MOOS** ('47 Socio.), 95, May 21, 2019, Spokane. **RUTH ESTHER POWELL** ('47 Speech & Hearing Sci.), 90, February 22, 2017, Los Altos, California. **MARIAN TAYLOR** ('47 Gen. St.), 95, August 2, 2019, Walla Walla. **WILLIAM P. TAYLOR** ('47 Busi.), 93, October 22, 2015, Walla Walla. **CHARLES E. FORD JR.** ('48 Comm.), 92, May 23, 2019, Cleveland, Ohio. **DORIS JEANNE HILDEN** ('48 Speech), 90, September 22, 2017, Hood River, Oregon. **SHIRLEY E. LINDAHL** ('48 Home Econ.), 92, July 27, 2019, Spokane. **ALTHA E. MESLER** ('48 Bacterio.), 99, August 5, 2019, Tacoma. **STUART J. HENDERSON** ('49 Civ. Eng.), 92, October 9, 2018, Bainbridge Island. **THEODORE ROBERT HOMCHICK** ('49 Acc., Phi Kappa Theta), 95, March 9, 2019, Wenatchee. **LEO STANLEY JENSEN** ('49 Ani. Sci.), 93, May 23, 2018, Athens, Georgia.

50

JOHN HOWARD BALDWIN ('50 Busi.), 95, July 2, 2019, Tacoma. **ROSEMARIE BEASLEY** ('50 English, Delta Delta Delta), 90, March 20, 2019, Yakima. **DOUGLAS W. BUTCHART** ('50 Ag., '53 Biol., '54 DVM), 91, June 23, 2019, Tucson, Arizona. **IRVING T. CARLSON** ('50, '52 MS Agro.), 92, February 23, 2019, Naperville, Illinois. **ARTHUR LEW COLGREN** ('50 Elec. Eng.), 91, March 25, 2019, Riverside, California. **JOAN CROWE** ('50 Music), 91, January 29, 2019, Wenatchee. **MARGARET DAVIDSON** ('50 MA Socio.), 94, June 19, 2019, Alexandria,

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The scholarships and fellowships I received in school were critical to achieving my educational goals and career success. It's a privilege to pay it forward.

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Virginia. **VERN DELBERT RITTER** ('50 Elec. Eng.), 94, April 12, 2019, Oroville. **RICHARD EUGENE STONE** ('50 Soc. St.), 95, July 13, 2019, Ferndale. **RICHARD LEROY "CORKY" VETTER** ('50 Busi., '52 MA Econ.), 90, November 20, 2018, Bellingham. **ALICE KNOWLES BERG** ('51 Bacterio.), 90, July 25, 2019, Spokane. **BRADLEY JOHN CARD** ('51 Civ. Eng.), 92, June 30, 2018, Yakima. **MERLE IVAN CHEESMAN** ('51 Ed.), 90, June 12, 2019, Tacoma. **DONALD ALLEN DUNCAN** ('51 Elem. Ed.), 89, May 31, 2019, Tacoma. **ROBERT EATON FYE** ('51 MS Entom.), 95, July 12, 2019, Starkville, Mississippi. **VERNON LLOYD HAVO** ('51 Mktg.), 90, July 12, 2019, Albuquerque, New Mexico. **LORNA ANN ROSS** ('51 Fine Arts), 89, October 19, 2018, Tucson, Arizona. **CAROL MORGAN SEVERIN** ('51 Rec.), 90, July 9, 2019, Castro Valley, California. **DUANE HERBERT BOX** ('52 Arch. Eng., Lambda Chi Alpha), 90, March 29, 2015, Seattle. **RICHARD R. CARLL** ('52 MA Econ.), 91, November 18, 2018, Rock Island, Illinois. **EUGENE EDWARD GERKEY** ('52 English, Lamba Chi Alpha), 90, October 13, 2018, Walla Walla. **EILEEN FAITH KITTOCK** ('52 Phys. Ed.), 89, July 22, 2019, Christopher Creek, Arizona. **GRAHAM M. WATKINS** ('52 Music), 88, February 17, 2019, Farmington, New Mexico. **JAMES "JIM" NORMAN ALLAN** ('53 Civ. Eng.), 88, May 20, 2019, Pierre, South Dakota. **RICHARD C. ALLARD** ('53 Comm., Sigma Nu), 88, June 30, 2019, Bluffton, South Carolina. **ROBERT HILL CHANEY** ('53 Comm.), 89, February 3, 2019, Lincoln, California. **JAMES KAY CONNOLLY** ('53, '60 MS Poli. Sci.), 89, May 8, 2019, Oro Valley, Arizona. **VERNON OSCAR LARSON** ('53 Pre-Med.), 88, June 6, 2016, Lakewood. **GEORGE GORDON SCHAAF** ('53 Ani. Sci.), 88, July 2, 2019, Silverdale. **CAROL L. HAYNES-FINCH** (x'55 Lib. Arts, Kappa Kappa Gamma), 85, April 21, 2019, Mt. Dora, Florida. **DIANE E. FLEMING** ('56 Gen. St.), 84, June 2, 2019, Yakima. **BARBARA A. SHARRARD** ('57 Elem. Ed., Delta Gamma), 83, June 15, 2019, Seattle. **CHARLES E. GARDNER** ('58 DVM), 84, April 25, 2019, Snohomish. **D. JOHN HENRY** ('58 Ag.), 86, May 28, 2019, Missoula, Montana. **MIKE MASON** ('58 Ag., '68 DVM, Sigma Alpha Epsilon), 84, July 21, 2019, Auburn. **THOMAS M. PURKETT** ('58 Busi.), 86, June 17, 2019, Spokane. **ROBERT A. ANDERSEN** ('59 Forest & Range Mgmt.), 84, July 3, 2019, Chewelah. **LEWIS GERALD HINTON SR.** ('59, '69 MAT Phys. Ed.), 90, February 7, 2019, Rochester. **ALAN "AL" EDWARD MCKAY** ('59 Ag. Ed., '68 MAT Biol.), 81, April 22, 2019, Moses Lake. **DON ARVIN PRIEST** ('59 Elec. Eng., '66 MBA), 81, March 5, 2019, Waitsburg.

60

SALLY ANN (KALHAGEN) LYNN ('60 French), 81, June 29, 2019, Tacoma. **ALICE MABEL SEATON** ('60 Bacterio.), 80, June 8, 2019, Kennewick. **DOUGLAS R. YOUNG** ('60 Gen. St.), 81, May 21, 2019, Henderson, Nevada. **JOHN A. GALLAGHER** ('61 Mktg.), 80, April 30, 2019, Berryville, Virginia. **SHIRLEY JEAN HANSEN** ('61 Ed.), 91, June 11, 2019, Gig Harbor. **SANDRA JEAN POWELL** ('61 Home Econ.), 79, January 31, 2019, Corvallis, Oregon. **WILLIAM "MIKE" BECKER** ('62 Civ. Eng.), 79, July 9, 2019, Eatonville. **GILBERT W. JORDAN** ('62 Music), 88, April 28, 2019, Moses Lake. **ALICE NELDA STANLEY** ('62 Elem. Ed.), 79, June 25, 2018, El Granada, California. **RICHARD S. KROLL** ('63 Police Sci.), 77, June 23, 2019, Deer Park. **THOMAS "TOM" DEAN STANFORD** ('63 Comm.), 78, February 16, 2019, San Diego, California. **DONALD L. BRUST** ('64 DVM), 80, January 30, 2019, Escondido, California. **LORIN J. CHRISTEAN** ('64 Phys. Ed., Phi Delta), 80, May 2, 2019, Bellevue. **KEITH P. LINCOLN** ('64 Phys. Ed.), 80, July 27, 2019, Pullman. **DAVID K. BILLINGSLEY** ('65 Ag. Eng.), 77, July 5, 2019, Palisades. **ROGER CURTIS BROWN** ('65 MS, '70 PhD Eng.), 86, June 11, 2019, Richland. **JERRY PATRICK KIRK** ('65 Phys. Ed.), 78, December 10, 2018, Tacoma. **SU-WAN Y. CHEN** ('65 MS Botany), 78, August 14, 2016, Seattle. **STEVE DRUMMOND** ('65 Poli. Sci.), 75, June 24, 2019, La Conner. **JOANN BYE STEDMAN** ('65 MA Rec.), 76, August 8, 2019, Phoenix, Arizona. **DALHART R. EKLUND** ('66 Mech. Eng.), 82, May 29, 2013, Manteca, California. **DONNA JEAN HAMILTON** ('67 Poli. Sci.), 74, May 16, 2019, Davis, California. **ALMYRA "DOLLY" HAVENHILL** ('67 MEd Ed.), 92, May 19, 2019, Romeoville, Illinois. **KATHYE ALYCE (SCHWARTZ) SMITH** ('67 Phys. Ed.), 73, June 9, 2019, Cocoa Beach, Florida. **NANCY LOUISE BERRY** ('68 English, '74 MA Comm.), 84, March 25, 2017, Clarkston. **JOHN DOUGLAS CHILGREN** ('68 MS, '75 PhD Zool.), 75, June 15, 2019, Portland, Oregon. **ANN JEANETTE (HUGHES) HECK** ('68 Ed.), 80, July 2, 2017, Gresham, Oregon. **ROGER NILES JOHNSON** ('68 MS Mat. Sci.), 81, April 29, 2019, Richland. **WILLIAM D. "DON" ALBERTSON** ('69 MAT Biol.), 80, June 15, 2018, Sandpoint, Idaho. **THOMAS WILLIS BARKER** ('69 Elec. Eng.), 72, July 29, 2019, Spokane. **FRANCES ANN KELLY** ('69 Busi.), 71, June 4, 2019, Kennewick. **ROBIN SCOTT ROHWER** ('69 Poli. Sci., Sigma Alpha Epsilon), 72, February 21, 2019, Rosalia. **ALBERT E. SCHWENK** ('69 PhD Econ.), 78, May 30, 2019, Falls Church, Virginia.

70

PERRY GRANT KEITHLEY ('70 MEd, '74 EdD), 83, April 4, 2019, Lacey. **DAVID L. SCHULTZ** ('70 MS, '75 PhD Food Sci.), 73, June 21, 2019, Tualatin, Oregon. **ELIZABETH KAY THORN** ('70 Poli. Sci.), 66, February 6, 2015, Dayton. **PATRICK R. GAVIN** ('71 DVM), 72, June 26, 2019, Sagle, Idaho. **FRANCIE A. (MOORE) HANSELL** ('71 Elem. Ed.), 70, September 13, 2018, Athena, Oregon. **VAN ROY SOUTHWORTH** ('71 Econ.), 70, July 23, 2019, Palo Alto, California. **CLAY BROOKS KING** ('72 PhD Econ.), 76, April 23, 2015, Sandy Valley, Nevada. **MELODY MAYER** ('72 Ed.), 69, June 23, 2019, Olympia. **JON TODD RICKMAN** ('72 PhD Comp. Sci.), 77, February 14, 2019, Maryville, Missouri. **ROBERT RAY BEZZO** ('74 Zool.), 67, April 7, 2019, Moses Lake. **STEPHEN JOHN DECKER** ('74 MA Police Sci.), 70, July 10, 2019, Boise, Idaho. **MICHAEL DALE DOHERTY** ('74 Vet. Sci., '77 DVM), 68, June 29,

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2019, Seattle. **THOMAS LEE SELLERS** ('74 Acc.), 69, June 30, 2019, East Wenatchee. **CARMEN DYBDAHL** ('75 Comm.), 66, July 21, 2019, Puyallup. **ROBERT DANE SHAW** ('75 MA, '83 PhD Anthro.), 74, January 5, 2019, Potomac, Maryland. **REED DONOHUE SMITH** ('75 Comm.), 65, June 21, 2019, Bellevue. **STEPHEN D. THORESON** ('77 Const. Mgmt.), 66, June 9, 2019, Seattle. **PETER DUNCAN LINDSAY** ('78 MS Bacterio.), 66, April 12, 2017, Brevard, North Carolina. **MICHAEL EVERETT PFARR** ('78 DVM), 73, May 2, 2019, Spokane. **GARY ROGER LEVANDER** ('79 Comm.), 61, January 31, 2019, Coupeville. **ROBERT P. "BOB" MCLAUGHLIN** ('79 History, Ed., Alpha Tau Omega), 64, June 26, 2019, Spokane. **CHARLES LENNOX WRIGHT V** ('79 Elec. Eng.), 63, January 6, 2016, Welches, Oregon.

80

JODIE MARIE RUSSELL AVERETT ('80 Crim. Jus.), 60, September 4, 2017, Baker City, Oregon. **MARY JANE BECKER** ('80 Hum. Dev.), 94, April 13, 2019, Spokane. **WARREN REX MORGAN** ('81 Hort.), 60, May 14, 2019, Quincy. **STEVEN DAVID PHILLIPS** ('82 Physics, Math.), 60, April 4, 2019, Gaithersburg, Maryland. **MYRNA JOHNSON BEST** ('83 Rec. and Leisure St.), 77, May 23, 2019, Coeur d'Alene, Idaho. **JAMES J. CLEARY** ('83 Soc. Sci.), 62, May 19, 2019, University Place. **BRAD JOHN LENNING** ('84 Ag. Econ.), 59, June 24, 2019, Seattle. **DOUGLAS SCOTT PIERCE** ('84 Info. Sys.), 58, July 29, 2019, Olympia. **JULIE ANN ZIMMER** ('84 Home Econ.), 59, June 26, 2019, Seattle. **ROBBIN C. HANSEN** ('87 Comm.), 60, April 30, 2019, Spokane. **JULIA RAYE SHEEHAN** ('89 Soc. Sci.), 68, June 11, 2019, Vancouver.

90

BRENT FOSTER MORGAN ('94 Mech. Eng.), 47, June 2019, Glendale, Arizona. **JENNIFER LEE STAGGS** ('94 Comm.), 48, August 8, 2019, Seattle. **KENNETH RAMON PETERSEN** ('96 Pharm.), 52, July 24, 2019, Olympia. **STEPHANIE KAY KALASZ-FLOWERS** ('97 Theatre), 54, July 27, 2019, Spokane. **LEANNE K. DICKINSON** ('99 Soc. Sci.), 50, August 3, 2019, Pasco. **GARY ANTHONY HOLMES** ('99 Socio.), 43, June 21, 2019, Lacey.

00

JANE ELIZABETH GILLESPIE ('04 MS Cell Biol.), 35, March 4, 2014, Mitchell, Indiana. **YOSEN LIU** ('04 MEd Counseling), 83, December 10, 2018, Richland. **PATRICK DAVID FLEMING** ('05 Soc. Sci.), 51, February 16, 2019, Richland. **MICHELLE ANNE BOYER** ('09, '11 MS Civ. Eng.), 32, June 3, 2019, Seattle.

10

ASHLEY ALAINE (TOLLEY) TURNER ('10 Hum., '11 English, '16 MAT Ed.), 33, August 17, 2017, Yakima. **TERESA ANN CARDEN** ('13 Nursing), 59, June 5, 2019, Vancouver. **YANG LIU** ('13 MA Ed.), 36, May 19, 2019, Pullman.

FACULTY AND STAFF

JACK CARLOYE, 92, Philosophy, 1962-1992, August 29, 2019, Pullman. **PATRICK GAVIN**, 72, Veterinary Clinical Sciences, 1979-2008, June 26, 2019, Sagle, Idaho. **ROBERT HUHTA**, 73, Facilities Services, 1979-2010, August 11, 2019, Moscow, Idaho. **STEPHANIE KAY KALASZ-FLOWERS**, 54, Public Records, 1997-2019, July 27, 2019, Spokane. **CHARLES J. KENLAN**, 87, Foreign Languages & Literatures, 1992-1999, May 3, 2019, Keizer, Oregon. **KEITH P. LINCOLN**, 80, Alumni Relations, 1971-2004, July 27, 2019, Pullman. **RICHARD MCCRAY**, 79, Facilities Services, 1969-2010, August 17, 2019, Spokane. **MARTHA OLIVER**, 63, Nursing, 2005-2017, July 6, 2019, Spokane. **RICHARD OLSON**, 80, Facilities Services, 1990-2010, July 1, 2019, Pullman. **JAMES V. "JIM" ROBERTS**, 78, Human Resource Services, 1967-2003, May 22, 2019, Pullman. **JOHN S. ROBINS**, 93, Agriculture, 1965-1982, June 27, 2019, Bremerton. **SHARLEE WILSON**, 79, Facility Services, 1978-2002. July 17, 2019, Couer d'Alene, Idaho.

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LASTwords

Steve Sylvester, associate professor of molecular biosciences, says he planted a rare corpse flower (*Amorphophallus titanium*, AKA titan arum) to attract visitors to WSU Vancouver.

Sylvester came to WSU Vancouver from WSU Pullman in 1996, the year the Salmon Creek campus opened. "I thought a corpse flower bloom would provide an opportunity for people to learn about us," he says.

After 17 years of cultivation, at 8:00 p.m. on July 15, under an almost-full waxing gibbous moon, **TITAN VANCOUG**, as the plant is affectionately known, bloomed. The next day, some 12,000 people flocked to campus to get a look—and a whiff. The bloom of a corpse flower lasts just 24 to 48 hours and is infamous for its odor, comparable to that of a decomposing animal.

Sylvester was able to get pollen from a titan arum that bloomed in New York in June. In a few months, he hopes to have viable seeds he can share with other universities, conservancies, and botanical gardens.

BY BRENDA ALLING

PHOTOS LAURA DUTELLE

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