

Washington State

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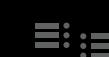
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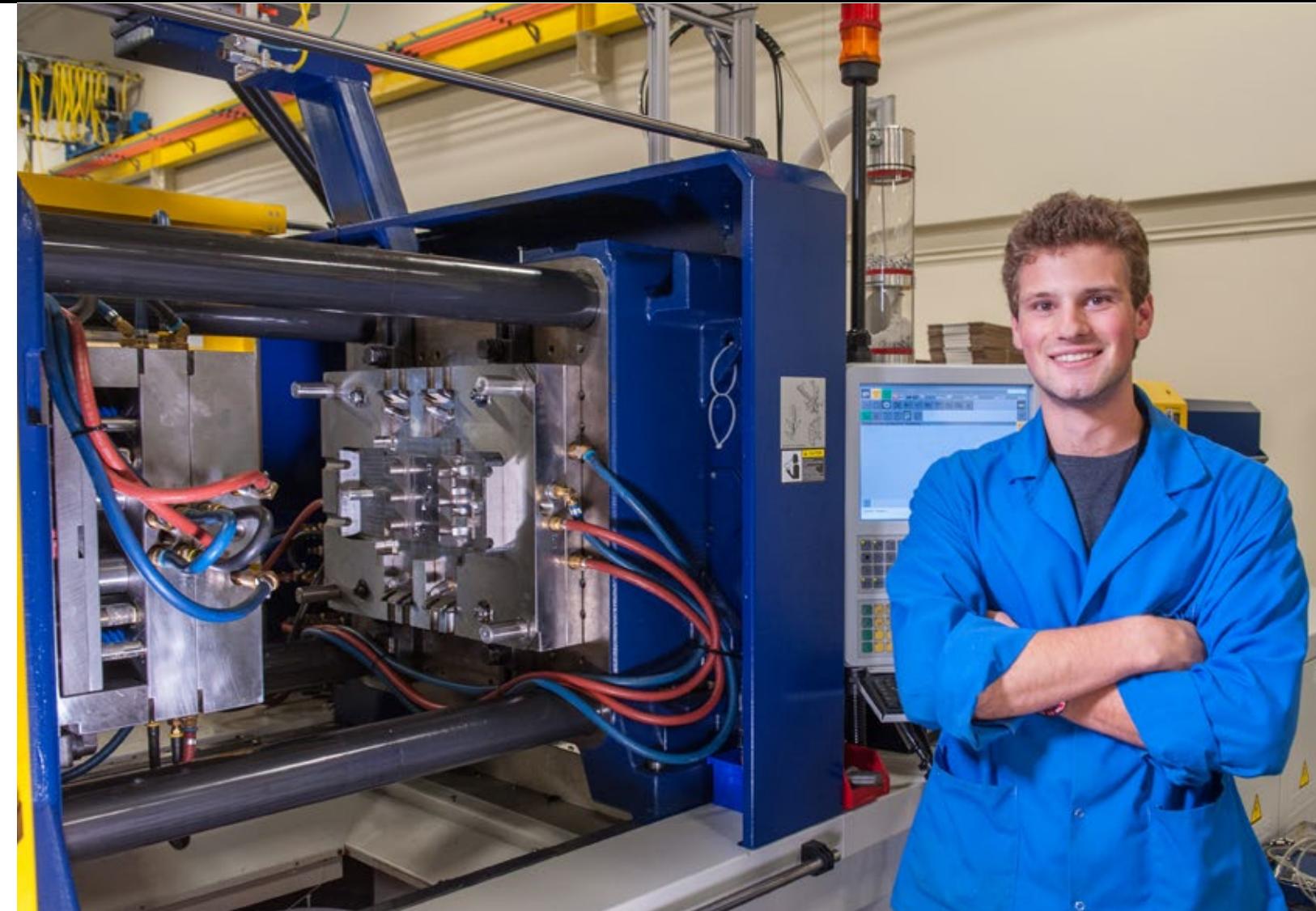
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FIRSTwords

Cycles. An army of frogs lived in a small pond about half a mile from my childhood home, sharing the space among the cattails with turtles and red-winged blackbirds. My friend and I built a small raft and tried to catch those noisy frogs—probably Pacific chorus frogs—but they were fast. I also witnessed the full life cycle of the amphibians there, from egg to tadpole, froglet to frog.

The fond memories of that small bit of water with its abundant animals came back to the surface as I considered the breakthrough research of Washington State University scientists into devastating diseases that have killed and endangered amphibians around the world. These animals play a vital role in the food web of our environments, so it's heartening to know that WSU researchers might break the disease cycle.

Our lives, too, revolve around recurring events, large and small. From the changing seasons to the switching of traffic signals, we move within a pattern. Here at the University, fall brings students and faculty back to campuses soon covered with colorful leaves, and the academic year begins anew. Yet, even as the months and years pass in that pattern, there's a shared goal that transcends the cycle and informs WSU's work.

The frogs in the pond, as generations went through their life cycles, shared a simple purpose: eat, avoid being eaten, reproduce. The University has its own higher purpose: access to excellent education, innovative research, and meaningful community outreach. Those noble goals go back to the origin of our land-grant institution and still resonate.

However, how do those goals translate into our era? How does WSU best serve the state, and beyond, as people move around, industries change, and scientific knowledge expands? It's a question addressed by presidents throughout Washington State's history, including our eleventh president Kirk Schulz. He and the WSU community continued that conversation in May, and now work toward a plan to honor and expand our land-grant mission into the 2020s.

Cycles can shift, hopefully for the better, as with more efficient traffic signals, improving health behaviors, or regenerating textiles from used clothes. Yet there is also a beauty in long-lasting repetition, like the flow of University life or the changes in leaves, flowers, and fruit on trees through the seasons.

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TALKback**A century of memories**

The Germans were entrenched on Riva Ridge, a 2,000-foot cliff looking down the throats of the Allies. We scaled the cliff in February 1943 and drove the Nazis off the ridge and Mount Belvedere. With the end of the war in Europe in June 1945, I was placed in the 55th Engineering Division and put on a troop ship through the Panama Canal to the Philippines, where, as we entered Manila in August, we watched an American destroyer sink a Japanese submarine. We got news over the loudspeaker that atomic bombs were dropped on Hiroshima and Nagasaki. My unit entered Japan with the 101st Airborne, after the surrender to MacArthur, and disarmed the Japanese.

I graduated from Skykomish High School in 1936 as valedictorian and received a one-semester scholarship at Washington State University, which was—at the time—Washington State College with 3,500 students. The award entitled me to housing in Waller Hall and dining at the Commons. Now I understand the goal is 40,000 students. I majored in geology under Harold E. Culver, head of the department, mineralogist and structural geologist Charles E. Campbell, and paleontologist Ralph L. Luper.

Those were the days of baseball coach Buck Bailey, basketball coach Jack Friel, quarterback Bill Sewell, wintertime ice skating in a flooded field down by the Fieldhouse, 7:00 a.m. ROTC, and the Big W paddle squad out chasing freshmen to buy green beanie hats to benefit sports. As a graduate student, I looked so young that I was chased by the paddle squad and soon learned it was useless to argue. I would run into the nearest building, up the stairs, down the other side, and back to the street.

I graduated in 1941 with a BS in geology and entered the graduate school with my new wife, Frances Nelson Valentine. We attended school together while I worked on my master's degree and she studied biology.

After the attack on Pearl Harbor, draft boards were set up and I was classified 1-A, which meant instantly available for service. I received one deferment to complete my master's degree and my teaching fellowship. During basic training at Camp Roberts in California, I volunteered for the 10th Mountain Division and trained at Camp Hale in Colorado, stayed briefly in Houston, Texas, and then headed on to the staging area at Pisa, Italy.

You can email or send us a letter with your winter story: magazine.wsu.edu/contact.

Correction

In our feature story "How may we help you?" in the Summer 2019 print issue, we stated that Seattle Central Library and its branches have about 4,000 visitors each day. That number is for Seattle Central Library alone.

BY REBECCA PHILLIPS

UPfront**Moving
an
orchard****HIGH ON A WINDSWEPT HILL,**

hundreds of apple saplings settle into high-tech homes at Washington State University's Spillman Agronomy Farm. After a century of being forced from one location to the next, the heirloom trees may have finally found a permanent site two miles south of the Pullman campus.

"We don't anticipate any urban, residential, or university development taking place out here," says Rich Koenig, professor in crop and soil sciences. "Our vision is that the orchard will be part of the new Tukey Horticultural Center for research, teaching, and extension outreach.

"It won't be just tree fruit," he says. "Eventually, we want to include landscape plants, ornamental horticulture, berries, vegetables, and opportunities for education and future research. You don't often get this chance to build from the ground up, to design a facility that uses all the modern technologies."

Horticulture has been at the heart of the University's mission since its inception in 1890. Remnants of the earliest apple orchard—planted in 1902 near the current Lewis Alumni Centre—can still be found in flower beds by Hulbert Hall.

Formal orchard teaching facilities were constructed in 1968 along Fairway Lane where the Student Recreation Center now stands. As WSU continued to grow, the grove was moved to an area near the Moscow-Pullman Regional Airport and named for

Extension orchardist Ronald B. Tukey. There, Tukey Orchard thrived for 40 years along with its popular public fruit sales.

In 2015, airport officials threw a wrench into the works when they proposed an expansion and realignment of the runway to accommodate larger aircraft. Plans for the new 1.3-mile runway involved purchasing half of the 70-acre orchard and placing restrictions on the part that remained.

"The FAA had the authority to restrict orchard operations if any activities near the runway created hazards for airplanes," Koenig says. "For example, things that attract birds, like cherry trees. Or students walking in the runway protection zone—that area where, if a plane is going to go down, it has a high probability of doing so during takeoff or landing."

With limited options elsewhere on campus, Koenig says they began the monumental task of moving Tukey Orchard's 120 heirloom apple varieties and other fruit trees to a ten-acre tract at Spillman Farm. Much of the work fell to the cheerful expertise of farm manager Deb Pehrson.

"We're not moving any trees to the new site, just grafting cuttings onto new root stocks," she says. "We have to start over fresh."

As the tree fruit industry moves toward automated harvesting, that means planting dwarf trees which require the support of trellises. Dwarf trees also allow for closer planting—up to 1,000 trees per acre at the Spillman site.

Pehrson says branches from their old apple varieties, like Winesap, Jonathan, and Scarlet O'Hara, were grafted onto dwarf root stocks and placed in potting soil to "take" for a year or

Tukey Orchard photo history: magazine.wsu.edu/extras/vintage-orchard

in one of these old varieties that we didn't even know about."

Pehrson, who is helping design the orchard layout, says they will be planting lots of new stuff as well. "I want to try growing different things that students don't usually see, like kiwis or maybe nut trees and mulberries in the windbreaks."

"When the orchard was originally planted at WSC, the vast majority of tree fruit faculty were here on campus," says Koenig. "Today, most are located out at the research centers, but there is still a relevant piece here

in Pullman focused on genetics and genomics rather than fruit production per acre. The orchard is still an important asset to the department, faculty, and students."

"As a land-grant university, the orchard is also a good way to develop community relations," adds Pehrson. "People really appreciate having an outdoor space they can go to purchase locally grown fruit." *

This fall, public apple sales will once again be offered at Tukey Horticultural Center.



ILLUSTRATION/FONA/SHUTTERSTOCK

Reduce, reuse, recycle, regenerate

BY BRIAN CHARLES CLARK

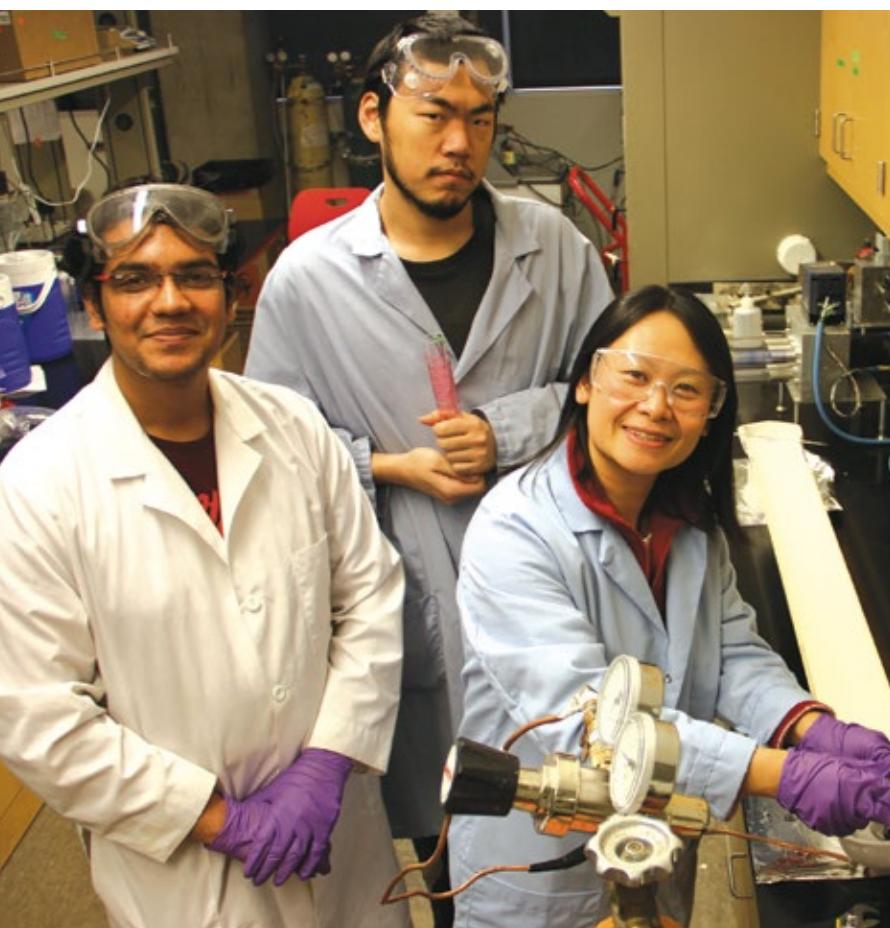


The bobbins Washington State University textile scientist Hang Liu examines are twined with something new: lustrous fibers with vibrant colors made from old T-shirts and jeans. This isn't recycled cotton; this is regenerated cellulose—one of the main molecules in plants, including cotton—in new fibers reincarnated from cast-off garments.

That's a big deal, as the Marie Kondo "tidying up" effect circles the globe and people clear their closets of unwanted clothes. Those garments, with all good intentions, might end up on the racks of thrift stores. But thrift stores, overwhelmed by our collective generosity, are unable to use everything we send their way and so are discarding many of those donations. In the end, our old clothes are piling up in already-choked landfills.

Cotton recycling is a long-standing challenge. The ability to do it well, and in a non-toxic way, has been called a "game changer" by at least one nonprofit that, a few years ago, offered a million Euro prize for just such a method. But current recycled fibers suffer from short staples—broken, uneven fibers. The long fibers in the original cotton fabric are broken down by the mechanical process that aims to give them new life. Short staples are hard to spin and so virgin cotton fibers must be added to the mix. The best recycled cotton is only about 30 percent recycled material.

With Liu's process, she says, "We dissolve the fibers down to the molecular level. What



Left: Regenerated fiber on a spool. Photo Robert Hubner. *Above, from left:* Badrul Haque, Wangcheng Liu, and Hang Liu. Photo Seth Truscott

we produce are brand new fibers, very long and lustrous. And because it's new, it's clean." That last bit is key to an industry in which, Liu adds, "people worry about contamination."

Whether virgin or recycled, everybody who deals with cotton is concerned about contamination. Virgin cotton often contains residues from other plants, and rocks and sand from loading docks—even workers' hair gets in to the mix during the spinning process. And strands of the ubiquitous plastic HDPE also get into the process at every step. With recycled cotton, the list of contaminants grows to include stitching thread (often nylon or polyester) and spandex.

Liu's method of regenerating cellulose is non-toxic. "Cellulose is really hard to dissolve," she says. "With the existing methods, toxic chemicals are used to dissolve it. But our chemicals are nontoxic. It's a common solvent, and we control the dissolving conditions to make the process work well." Even better, the chemicals used in the dissolution

bath can themselves be recycled and reused in other processes.

And while her process does use water, it's minimal compared to the 10,000 liters of water it takes to make a kilo of cotton fabric. You can look at a T-shirt as nearly a month's supply of drinking, cooking, and washing water for an adult.

Liu speculates that her process is still a couple years from being scaled up to the commercial level. Going from the lab bench to manufacturing dresses, skirts, and T-shirts is full of engineering challenges. But Liu already has major players in the clothing industry interested.

"There's a lot we can do to customize the fiber," Liu says. Flame retardants could be added, as could antimicrobials for hospital gowns. The feel of the fiber can be customized, too. And the dyes used in the original materials can be retained, making highly marketable limited-edition colors possible.

"Whatever you use cotton for, you can use this regenerated fiber," Liu concludes. *

Smart signals

BY LARRY CLARK

Sitting in traffic, especially in a busy city like Seattle, can feel like a twisted version of the kids' game "red light, green light." You crawl forward in your car a bit and then the signal changes and you wait, frustrated, through another cycle.

While many traffic signals still run on timers that might cause those delays, the future of traffic control at intersections could get a lot smarter and more efficient once those signals start talking to each other and to the cars, says Ali Hajbabaie, assistant professor of civil and environmental engineering at Washington State University's Voiland College of Engineering and Architecture.

Hajbabaie and his graduate students examine the effects of traffic signals that work as networks, talking with connected vehicles or sensors to better adjust timing. To avoid overload, each intersection is its own network, which then communicates with other traffic signal networks to figure out how to keep vehicles moving in a more effective way and reduce congestion.

"Think about Seattle. There are many intersections and many constraints" to the mathematical problem, says Hajbabaie. "Each intersection has too many decisions to make, so we distribute the problem. Instead of looking at the whole city, which represents a very complex problem, each intersection is a problem that we can solve."

Based on their models, that system could reduce delays by up to 43 percent. It also relies heavily on connected vehicles that communicate with the signals and each other. In the real world, the results likely wouldn't be that dramatic, but traffic congestion would significantly improve with around 35 percent of vehicles connected.

Congestion is a pressing and very visible problem, particularly in urban areas around the world. Kirkland-based connected car services company INRIX calculated that in 2018 commuters across the United States spent an

average 97 hours last year stuck in traffic, at a cost of \$87 billion lost to traffic congestion. That doesn't even count the environmental or health consequences.

In Seattle, the sixth most congested U.S. city according to the study, motorists spent an average 138 hours in traffic, costing an average \$1,932 each. Portland, Oregon, clocked in at number 10 on that list.

Smarter traffic signals wouldn't solve all traffic congestion, but, Hajbabaie says, more communication between vehicles and signals can make a difference.

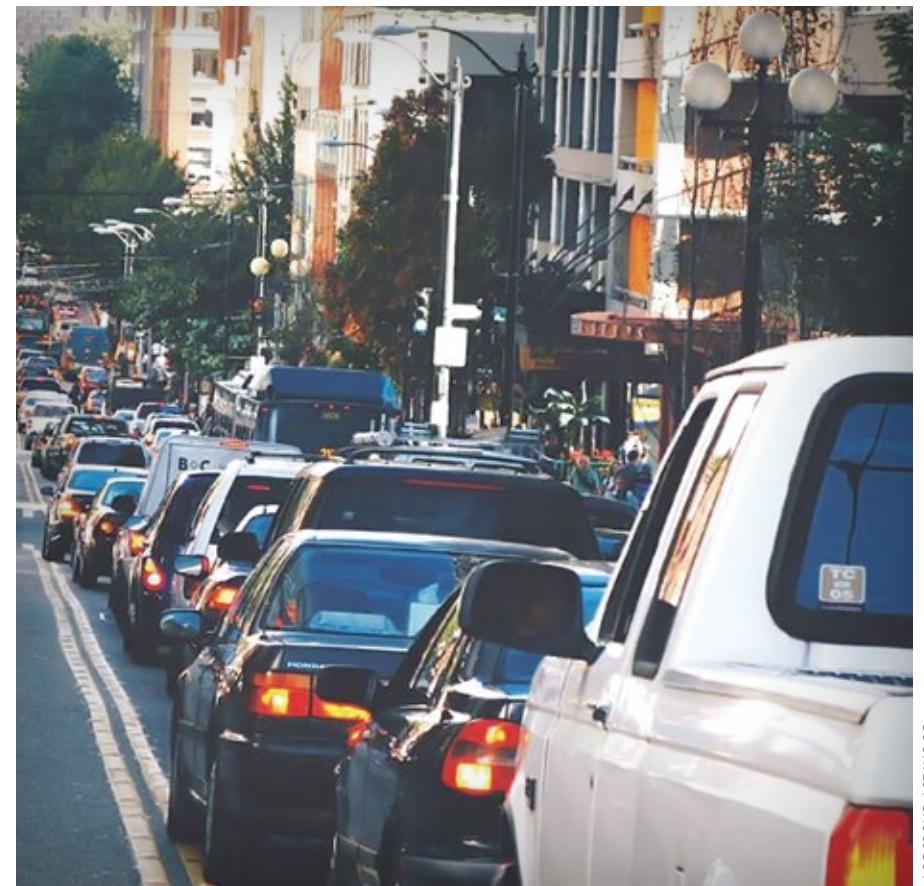
"We've created that conversation between intersections, so that one might tell another one, 'I'm going to send this many vehicles to you.' The other one says, 'OK, I have this much capacity to receive vehicles,'" he says.

Mehrdad Tajalli, a doctoral student working with Hajbabaie, says the old methods, such as traffic engineers counting the vehicles in an intersection and then adjusting timing on the signal, are not able to cope with the additional traffic or the emergent technologies.

In the connected system, "each intersection can find the optimal timing," he says. "Signal controllers can also send messages to vehicles to adjust their speed. By combining both signal timing and speed optimization, it'll reduce travel time by 6-7 percent more."

Hajbabaie and his students projected what could happen when 100 percent of vehicles are connected and automated. On the computer model, vehicles zip around each other in what appears to be a chaotic scramble. However, the vehicles clearly are telling each other how to slow down, speed up, and maneuver in a way that keeps everyone moving quickly with virtually no wait times or near-crash conditions.

While a connected traffic future may be a decade or more away, Hajbabaie and his students are already examining the effects of a connected and automated vehicle environment through a grant from the Washington State Department of Transportation to prepare for the future. *



COURTESY CROSSCUT

Hearts in motion

BY LATISHA JENSEN '19

Joselín Hicho received the call the night of March 12. Her 21-month-old son, César Vicente, had been added to the next day's schedule for volunteer surgeons to operate on his cleft lip. The next morning, they hopped on the 5:00 a.m. bus from their town of San Sebastian for the two-hour journey to a private hospital in Zacapa, Guatemala.

The humanitarian organization Hearts in Motion (HIM) has been sending surgeons to perform life-changing surgeries on Guatemalans for about 35 years. Cleft lip and palate, which can lead to malnutrition, are common operations in the area.

Hicho says she's happy her child will have *una vida normal*, a normal life.

Lars Neuenschwander, one of 35 Washington State University students on this year's spring break volunteer trip with HIM, witnessed surgeries such as Vicente's, and his dream to provide free medical services to less fortunate individuals around the world solidified into a concrete goal.

"I had realized that I spent a lot of time engineering things that help people, but never really got an opportunity to work with those people," says Neuenschwander, who just graduated with bachelor's degrees in bioengineering and Spanish. "[Hearts in Motion] was the perfect combination."

For 12 years, students, primarily health sciences and Spanish majors, have traveled to Guatemala with HIM offering assistance to dentists, surgeons, and other specialists. They were assigned a new duty each day, such as checking people in, measuring height and weight, or drawing blood. They also tested people for anemia and diabetes, assisted in tooth extractions, distributed and gave instructions on pain pills, helped with speech and physical therapy, and constructed homes.

The students all had varying levels of Spanish skills, and Neuenschwander says being a "runner" to direct people at the clinics required the most diverse set of Spanish words.

If patients had anemia or diabetes, runners would explain that, if diabetic, they needed to drink less soda and

Students also visited the nearby nutrition center for malnourished children, orphanage, and senior center built by the HIM program.

The seniors come in on Wednesdays, and the orphanage children serve them meals, says HIM founder Karen Scheeringa-Parra. What makes the program



eat fewer sugary foods. If anemic, runners would send them to Ana María Rodríguez-Vivaldi, associate professor of Spanish, who would give detailed advice.

"There is nothing I can compare to being thrust into a situation where everybody around you speaks no English, and you have to communicate really refined instructions about their health," Neuenschwander says.

unique is that anyone at any age or ability can help change others' lives, she says.

"This [program] is so broad that you can bring your grandma down and she can rock babies in the nutrition center while we go do surgery."

Scheeringa-Parra always had a heart for helping others and went to school to be a social worker.

Her journey to creating this nonprofit was not a smooth one.

After suffering a fifth miscarriage, she adopted a little girl from South Korea. She had no idea how this would lead her to help hundreds of other children and eleven adopted children of her own. Eventually, she was able to conceive one child.

While in South Korea, she met a woman who was adopting six children

In 1990, HIM started sending university students as volunteers to make a larger impact. The program has been in Zacapa, the area with the most need, for 24 years.

WSU junior Auni Edwards arrived in Zacapa as a biology major and, after interacting with Guatemalans, left with the realization that she wants to become



with heart defects. She was doing this because the child she adopted a year prior had died due to a lack of timely medical attention.

"I was so impressed when I met her. She had turned her pain into something really incredible," Scheeringa-Parra says.

Inspired, she brought home a little girl from Guatemala in 1983 to operate on her bilateral cleft palate. The next year, she brought 27 more children.

a physician's assistant to have more direct personal contact with patients.

It was Edwards's first study abroad experience, and she says she was shocked by how kind and grateful everyone was.

"They have so little but they are still just as happy, if not happier, overall," Edwards says. "We were literally pulling teeth with just topical, and they were awake. They got up out of their chairs and hugged and thanked us."

Edwards traveled to Ecuador in July to test anemia rates with Kathy Beerman, professor in the School of Biological Sciences. Beerman recognized that Guatemalans might have iron deficiency because of their high-starch diets when she first started going on the trip seven years ago.

The group rode buses on dirt roads in the sweltering heat to a new village each day, set up the clinic, and spent the day offering their services, including anemia testing. About 100 people were tested in each village. This year, the average anemia rates ranged from 20 to 25 percent, up to 35 percent.

When patients test positive for anemia, they are given the Lucky Iron Fish, a fish-shaped iron piece activated in boiling water and then cooked in meals such as rice to enrich the food with iron. It lasts five years for an entire family.

HIM has retested patients in later years to see the impact, and Guatemalans have reported feeling more energetic and having an increased ability to do activities such as walking their children to school.

HIM already offers a few services in Ecuador but founder Scheeringa-Parra wants to expand even more. Beerman's goal is to start a second HIM program in Ecuador in May 2020, if there's enough medical need.

Edwards says the HIM excursion gives students a cultural experience they couldn't fully grasp sitting in a classroom, and Neuenschwander agrees.

"We complain about things like not having Wi-Fi," Neuenschwander says. "But when you compare them to the things other people in the world live with—that really provides you with perspective of how privileged you actually are." *

Latisha Jensen ('19 Comm.) and photojournalist Matthew Winchell, part of the Murrow College Backpack Journalism program, accompanied the HIM volunteers in March.

Opposite: Happy Guatemalan kids. **Clockwise from top left:** Patients lined up for exams. Guatemalan boys. Lars Neuenschwander. Volunteer doctors, nurses, and other medical professionals perform cleft palate repair and other surgeries. Photos Matt Winchell



CROSSOVER: GATOR TAIL "TAKE." BELOW: DAVE BJUR (PHOTO: DEAN HARE)



YAZZ Band
GREG YASINITSKY
YAZZ RECORDINGS: 2018

Greg Yasinitsky wears many hats. He is a scholar of jazz, a published writer, a prolific and award-winning composer and arranger, an avid performer in the jazz and classical idioms, and Regents Professor of music at Washington State University. With a background as diverse as his, one would expect great things when he channels all of his skill and energy into one recording project. Yasinitsky's 2018 release *YAZZ Band* does not disappoint. Featuring nine original compositions arranged for big band, the album takes the listener on a diverse and evocative musical journey.

The action-packed opening track "Serpentine" lives up to its name and is equal parts John Coltrane, Wayne Shorter, and...snakes. The melody of this energetic piece grips the listener's attention as it chromatically slithers to

and fro. Other stand-out performances include the ballad "Missing You," "True North" with its playful unison theme woven throughout, and the cool and confident "New York Confidential" which tips its hat to the writing styles of Billy Strayhorn and Thad Jones. Other highlights from the album include beautiful and burnin' solos from Brian Ward on piano and Vern Sielert on trumpet.

Yasinitsky is a generous and thoughtful arranger, giving each section of the band their time to shine, like the trombone section on "Gator Tail," or the folks on the lower sounding instruments on "Full Blown Blues." Being a saxophonist, he really knows how to craft a sax soli, as can be heard on "Partial Eclipse" and "One-Two-Three." His quirky, humorous, and engaging arranging style means you'll be listening to *YAZZ Band* over and over again, and hearing something new each time.

On a side note, I usually shy away from modern big band recordings created using a handful of players and overdubbing section parts as I often find them to sound sterile or lacking tonal diversity within the horn sections. *YAZZ Band*, recorded at the WSU recording studio, successfully presents the music and ensemble without sounding bland or sonically drab.

— Kevin Woods

Kevin Woods is the director of jazz studies at Western Washington University.



music students at the tail end of the twentieth century."

Students also learn how to perform while being recorded, playing through headphones, wrestling with different takes. It's no small feat, says Brian Ward, pianist, composer, arranger, and director of the WSU Jazz Big Band, the winning college ensemble at this year's Lionel Hampton Jazz Festival. Today, the band—I count 17 instruments, plus a drum kit requiring eight microphones—is crammed into the studio to record Duke Ellington's symphonic "The Tattooed Bride."

"Are we ready?" Bjur says over the intercom.

"We think so," says Ward.

"Well let's find out. Here we go."

It's a long, dynamic piece with lots of moving parts. One challenge, Bjur says, is the band invariably plays louder during a recording than the sound check.

"Kid's got a nice clarinet tone," he remarks during a solo. Capturing it is a Neumann U67, the go-to microphone of Al Schmitt, a Grammy-draped producer behind more than 150 gold and platinum records and a Bjur guru.

It's just one of many fastidious details in the process. Another: multiple computers running algorithms just for reverb. With the right adjustments, the studio can sound like a church, concert hall, or nightclub.

At one point a muffled thud comes through the control room speakers. Someone bumped a mic, says Bjur, but he can isolate it and replace it with sound from an earlier take.

"What doesn't work is if someone plays the wrong note," he says.

That doesn't happen. The students finish the tune at 12:59 p.m. The students applaud, give Ward a parting gift, and quickly scatter. *

Studio of notes

BY ERIC SORENSEN

The first thing you might notice about the Washington State University recording studio is the silence. It starts when Dave Bjur, studio manager and chief engineer, closes the hallway door, sealing off the random din of the Kimbrough Music Building's top floor. Then he closes a second door and a weird sensation settles into the ears that, when you think about it, is rare in the modern world.

It's an anti-sound, the audio version of true black, a pressing absence that makes the ear-drums feel like hands grasping at empty space.

"Isn't it amazing?" says Bjur.

This is the sonically blank slate on which WSU music students and faculty immortalize their art. It also epitomizes some of the wholesale changes in the music recording industry, from a caste system of companies and recording contracts to a more egalitarian model of do-it-yourself recording and digital distribution.

The studio was part of a two-story addition to Kimbrough in the 1990s. The faculty wanted a way to record and share their scholarly output, and the Paul G. Allen Family Foundation helped with a \$625,000 gift.

"It's a way to share our scholarship widely," says Greg Yasinitsky, Regents Professor of music, saxophonist, and composer. A concert can only reach so many people,

however far away, "but if we make a recording, people all over the world can hear it."

Indeed, when Yasinitsky visited his daughter in Europe and asked if she had received some compact discs he had sent, she confessed she didn't have a CD player. But moments later, she said, "Oh, here you are," and there he was on her phone, on Apple Music.

Through the studio and the School of Music's in-house label, Washington State University Recordings, WSU faculty have produced more than a dozen classical and jazz recordings. Each one goes through a peer-review process with musical experts from around the United States before being distributed through iTunes, CD Baby, Amazon, Apple Music, Spotify, YouTube, and other services.

WSU Recordings is only a fraction of the music made in the studio, says Yasinitsky, with other recordings released on different

labels, as publisher's demos, and more. Also, at the Allen Foundation's request, the studio is open to everyone at WSU and in Pullman for the nominal charge of \$40 an hour.

For students, the studio is a way to develop "blended careers" in which performing is only one of several skills. The school just started offering a music technology minor aimed at building a foundation for recording, production, and performance.

"It's part of the education for the future, in a way," Yasinitsky says. "It's probably what folks should have been teaching

SIDELINES

The French connection

BY REBECCA PHILLIPS



IT WAS JUST AFTER MIDNIGHT during a 1,200-kilometer cycling event in the French Pyrenees when rider Vince Sikorski felt something hit his left shin.

"I was alone and saw it out of the corner of my eye," recalls Sikorski ('81 Pharm.). "In the ambient light, I looked down and saw a lump attached to my ankle. 'What the hell is this thing?!" I thought. As I ripped it away, I felt a sting in my finger and saw a drop of blood. I'd been bitten."

At the next checkpoint, he explained the situation to the volunteer who guessed it was a bat and took Sikorski to a clinic. There, a nurse assured him that the risk of rabies in France is very low and not to worry.

About that time, however, he texted wife, Susan Maasch ('76, '81 DVM), in Bend, Oregon. Alarmed, she quickly consulted with veterinary friends and together, they made a plan to intercept Sikorski along his route. Twenty-four hours later, he was whisked to a hospital in Toulouse for post-exposure rabies prophylaxis.

"I used to worry about him falling asleep, crashing, being hit by a car," Maasch says. "Now, I need to add bitten by a bat to my list. Cycling really makes him happy, but I won't be sad when he gives it up."

On the fateful day that Sikorski finally hangs up his helmet, thousands of new riders will hit the pedals in what continues to be one of the world's most popular and fast-growing sports. In the United States, Washington leads the pack, named most bicycle-friendly state by the League of American Bicyclists for 12 years running.

Whether that's green commuting in Seattle, singletrack fun on Mt. Spokane, riding the Sacagawea Heritage Trail in Richland, or participating in high-stakes international competition and touring, cycling offers something for almost everyone.

It's been 25 years of fun-filled adventure for world-class cyclists Sikorski and Maasch, including learning to pack, ship, and assemble single and tandem bikes. So far, the couple has toured France, Spain, Italy, Ireland, Scotland, Portugal, Slovenia, Croatia, Taiwan, Vietnam, Cambodia, Thailand, Canada, and parts of the United States. In all, they've logged around 75,000 miles on five different tandems.

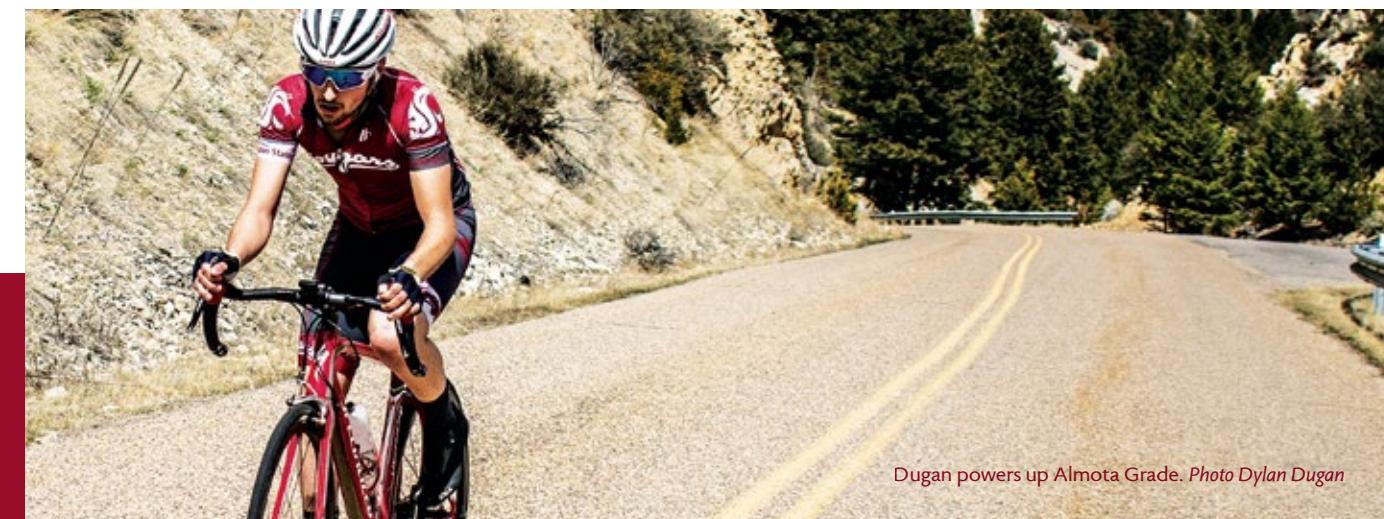
"I started cycling as a student at WSU," Sikorski says. "I had a cheap Sears bike and I'd ride it out to my job at the radiation center on breaks between classes."

Maasch also rode at WSU but became serious when the couple moved to Everett and eventually started touring. "One of our first trips was to China in 1985 soon after it opened to foreigners," she says. "In 1986, we went to New Zealand and rode 1,600 miles in six weeks. It was exciting—it's an awesome feeling when you realize you've gone that far under your own power."

"It's a stress reliever," adds Sikorski. "We were both starting demanding careers in medicine. Then, in New Zealand, I'd get up in the morning and my biggest concern was, 'Am I going to get a cold beer at the end of the day?'"

This August Maasch will cheer on Sikorski as he returns to France for his seventh solo ride in the Paris-Brest-Paris Randonneur, another 1,200-kilometer timed ride that is held every four years.

WASHINGTON STATE MAGAZINE FALL 2019



Dugan powers up Almota Grade. Photo Dylan Dugan

"It's a challenge. You ride nonstop," he says. "It's really fun to watch the sunset and hours later, watch it rise again. It takes up to 90 hours to complete, so you don't get to sleep much. I usually finish in about 70 hours. It's very hilly terrain."

"There's nothing else like it," says Maasch. "The French are out there cheering in the middle of the night. They give food and gifts. They have a hose if it's hot and kids come out with boxes of cookies. Even if they ride through some little town at 2:00 a.m., there will be a bunch of drunks outside the bar cheering at them. The French love cycling and participate however they can."

THAT EXHILARATION AND INSPIRATION are duly shared by Chris Dugan, a senior in social sciences and two-term captain of the WSU Cycling Team. Dugan is one of the University's most dedicated competitors in the Northwest Collegiate Cycling Conference, but his eyes are on a bigger prize—the Tour de France.

"I started riding when I was five, chasing that dream," he says. "I'll never stop until I get there."

Though Dugan admits taller, larger riders have the advantage in sprints or flat road races, he dominates as a "climber" on hills. Last spring, he won a tough race at the Montana Bobcat Classic in Bozeman.

"The race was 30 miles long and then a three-mile climb almost straight up," he says. "Even my parents came to watch that one."

Dugan trains about 60 miles every day, mostly on hills. Fluent in Spanish, he was first inspired by former professional Spanish cyclist Alberto Contador as well as Nairo Quintana, a Colombian climber whom Dugan says reignited cycling for that country and has become a national hero.

"I want to reinvent competitive cycling for the United States—that's my ultimate goal," says Dugan. "In the Tour de France, there are no longer any all-American teams or American team captains that are climbers. To win it, you need to be good at climbing."

If all goes well, Dugan hopes to be in the Tour de France by 2024 or 2025. Cougs from every nation will be cheering. *



OURstory

Enoch Bryan's Riviera

Enoch Bryan had been president of Washington State College for 16 years when he purchased 296 acres of fertile land on Brown's Bar above the Snake River in 1909. His plan was to market an agricultural settlement he called Riviera to people eager to build a life in the country. The Riviera Company promised to plant their land "with any kind of fruit you desire" and turn over the land in four years, "a complete project."

In his *Historical Sketch of the State College of Washington*, Bryan described 1906-7 as the close of "a second period of development" of WSC, marking a time of great satisfaction, but also of exhaustion. In 1907, Bryan had taken a leave from his presidency to recuperate from typhoid, his first break since becoming president in 1893. He then tried to resign in 1910. Perhaps he had hoped to invest all of his energy into his agrarian dream. But he was dissuaded from resigning by vigorous protests from faculty, students, citizens, and regents.

Although Arthur wrote to his mother a few months later that the line to Riviera had been finished, their attempt to electrify the town and irrigation pumps eventually failed, as the generator in Starbuck could not produce enough power. An attempt to



Riviera School circa 1917. From W.F. Fletcher, *Starbuck 1882-1982* (Fairfield, Washington: Ye Galleon Press, 1982), 84.

BY TIM STEURY

"Prepare for the Change THAT'S COMING," blared an ad promoting the project. "The people must go back to the soil to avert a financial crash."

For a short while, Riviera showed promise. According to Don Clarke in the *Bunchgrass Historian*, the company built a store, a post office, a blacksmith shop, a boarding house, and a school. Bryan built a cottage for his family. Accounts vary, but there were as many as a dozen or so houses at the community's height. At one time, the school enrolled 35 children. But that success was fleeting.

Bryan's son Arthur was the manager and secretary-treasurer of the Riviera Company. In a letter to his father barely a year after the land was purchased, Arthur noted that Riviera was overdrawn at the bank and there was no money to pay for electric poles or freight. His father had bought an electric company in Starbuck, with the goal of stringing electric wires 11 miles down the rugged breaks to Riviera to run irrigation pumps.

Even though the failure of Riviera was undoubtedly a great disappointment, Bryan met it with the same determination he did the challenges of founding a college. He eventually paid off the mortgage, and upon his death in 1941, Riviera was listed as a major asset in his estate. His agrarian dream now lies under the waters of Lake Bryan formed by Little Goose Dam. *

The early twentieth century was a time of great regional excitement for fruit raising and country life, and Bryan's endeavor had considerable context. As historian John Fahey reflected in recalling Arcadia, a land venture near Deer Park, Washington, in 1906, "When the great rush of land-seeking immigrants to the interior Pacific Northwest slowed..., sellers of irrigated tracts used skillful salesmanship to attract buyers, largely middle-class, who idealized country living and yearned to escape from cities."

Bryan certainly knew about Arcadia and other such schemes. Arcadia's early success might well have inspired him as he contemplated a rural life, and income, after WSC.

But more significant than these business inspirations were Bryan's agrarian roots and values. Raised on a subsistence farm in southern Indiana, Bryan idealized rural life, his values developing into a passion for his land-grant vision.

Advertising for Riviera promoted these ideals, sometimes to hyperbolic extremes.

deliver water via a wooden flume upstream from the settlement also failed.

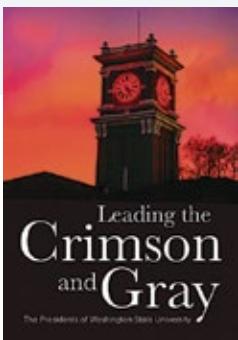
Even if efforts to establish ample irrigation at Riviera had succeeded, it may well be that Bryan's dream was nevertheless doomed. It was simply too isolated. Other than the very rough road from Starbuck to Riviera, the only way to reach, and supply, Riviera was by train to Ridpath Station, across the river from Riviera, and then by ferry.

And then came World War I. A letter from Arthur to his father dated February 4, 1918, reports that he was on his way to the rifle range at Annapolis, where he was stationed with the 56th U.S. Engineers. He asks his father to take care of some finances and notes that he was probably overdrawn to the company.

Other accounts report that remaining residents of Riviera were lured away by war industry jobs.

Even though the failure of Riviera was

undoubtedly a great disappointment, Bryan met it with the same determination he did the challenges of founding a college. He eventually paid off the mortgage, and upon his death in 1941, Riviera was listed as a major asset in his estate. His agrarian dream now lies under the waters of Lake Bryan formed by Little Goose Dam. *



Leading the Crimson and Gray: The Presidents of Washington State University

WSU PRESS: 2019

The long struggle to found a public university in the nascent United States began with George Washington. Washington offered to donate land to the cause, which he saw as common ground for those separated by the "jealousies and prejudices which one part of the Union had imbibed against another part." Washington was ignored year after year by Congress.

It was left to Thomas Jefferson to found one of the nation's first state universities, the University of Virginia, in 1819. That prototype would help inspire the land-grant Morrill Act, which Abraham Lincoln signed into law in 1862.

Thirty-some years later, Washington's land-grant college was founded in the wheat fields of the Palouse.

This, and more, can be gleaned from *Leading the Crimson and Gray*, an anthology of biographies of WSU's first ten presidents.

Commissioned and published by WSU Press, the contributors are all sharp-eyed historians, either by profession or avocation. Each president's biography covers the arc of his major accomplishments, as well as providing some psychological insight into what made these men tick.

"Don't these people ever quit?" writes William Stimson ('89 MA, '99 PhD History) in the introduction, referring to WSU's tenth president Elson S. Floyd's herculean push for the state's second medical school. "The answer is no," of course they don't quit. That's perhaps down to WSU's famous tenacity but, more than that, Floyd's drive is testament to the insistent championing of the land-grant philosophy that has undergirded the system of state universities since its inception.

The first two long-term presidents, Enoch A. Bryan and Ernest Holland, certainly began that tradition of dedication.

They oversaw the growth of Washington State from 1893 to 1945, through two world wars, the Great Depression, and resistance to expanding the college's mission. The two men essentially gave their lives to the institution. "Do you love Washington State College as I do?" Holland asked in his final words to his sister in 1950.

The presidents faced much adversity that tested their resolve, as well. Glenn Terrell led WSU from 1965 to 1985. At 9:00 p.m. one night in 1970, thousands of students staged a torch-lit march on the president's mansion. Terrell came out to speak with the students—"just a little bit nervous," he later admitted—to hear their demands. The result was a surge of commitment to diversity and a variety of anti-racism workshops, which drew over 20,000 people. Some faculty and alumni despised the man, but students came to love him as a champion of social justice.

Anyone interested in the history of WSU is well served by this volume. It documents the growth of Washington State and each biographical essay is filled out with photos from WSU's large collection of archival images.

—Brian Charles Clark

Land-grant future

BY LARRY CLARK

Washington's land-grant college opened in 1892 to educate the working class and focus on agriculture. Times and the college changed, but it remains dedicated to accessible education, research, and service to the public.

Washington State University President Kirk Schulz—himself a graduate, faculty, administrator, and president of land-grant universities—has witnessed the ongoing transformation. When Schulz read the 2018 book *Land-Grant Universities for the Future*, by Stephen M. Gavazzi of The Ohio State University and West Virginia University President E. Gordon Gee, it struck a chord. Gavazzi and Gee had interviewed land-grant leaders, and identified strengths and changing threats.

The book, and the questions it raises, led to a WSU-wide symposium in May, where several hundred members of the WSU community turned out for the conversation about WSU's future, kicked off by Gavazzi.

Gavazzi emphasized that land-grants must remain centered on communities. They should teach those in communities who most need it, research issues of importance to them, and serve specific community needs.

But the University now faces many, sometimes competing, priorities. How does it serve both rural and urban communities? How do we keep education affordable and accessible? What part does technology play?

During the symposium, WSU faculty and staff asked tough questions and offered many examples of service to the state.

"I cannot recall a similar event focused on the land-grant mission, nor one which created the level of impassioned intensity I felt from the WSU community," wrote Schulz.

The event spurred several thoughts for Schulz. "WSU must be seen as a preferred

problem solver for issues facing the state and the Pacific Northwest," he wrote. Schulz also identified the need for equity and inclusion, greater integration of Extension with research faculty, evolving faculty roles, and identifying a statewide educational "Cougar Experience."

It's more than an academic exercise. Schulz and new Provost Mitzi Montoya are leading development of the next University strategic plan that embraces the future land-grant. It's also integrated with the Drive to 25, WSU's effort to become one of the nation's top 25 public research universities by 2030.

There's homework for alumni and other members of the WSU community, as well. We want to know: How did land-grant values of service and accessibility affect your education at WSU, and your life beyond college? How can WSU better serve the public good, and specifically your community?

Visit magazine.wsu.edu/land-grant-future and tell us your answers. *

Rainier cherries

BY ADRIANA JANOVICH

Their skin is thin and sensitive. They're easily bruised. And their season—six to seven weeks, if we're lucky—is more fleeting than summer itself. That short harvest time and extreme susceptibility to wind and rain and temperatures either too hot or too cold are just a couple of reasons why Rainier cherries are so special.

These spectacular stone fruits are prized for their sweetness and color. Distinctive and delicate, Rainiers—the color of a buttercup tinged with a pleasing pink to bright red blush—are little gems.

"The appeal of those contrasting colors is what makes them stand out on the tree and in the retail market. It's just a good combination," says WSU horticulturist and cherry expert Matthew Whiting ('01 PhD). He calls Rainiers "tree candy."

Their flesh—creamy, yellow, firm, gently floral, exceptionally sweet—is made up of nearly one-fifth sugar, or anywhere from 17 to 23 percent. "The Rainier is a wonderful-tasting fruit," Whiting says. "With such high sugars and typically very low acidity, it truly is like eating a piece of candy, except it's much better for you."

Customers have been willing to pay more for this two-toned premium cherry than for other sweet cherries. And, over the years, they've become increasingly popular. The 2018 crop was the largest ever for Rainiers, according to an annual review by the Northwest Cherry Growers, a Yakima-based organization that markets cherries for growers in Washington, Oregon, Idaho, Montana, and Utah. Packers moved 2.52 million boxes of Rainier cherries last year, breaking the previous record of 2.36 million in 2014.

Named for Mount Rainier and developed at WSU, Rainier cherries are a cross between two cultivars: the Bing, which originated in Oregon in 1875, and the Van, which originated in British Columbia in 1936. "I was just as surprised as anyone that 'white' ones showed up," Harold Fogle told *The Seattle Times* in 2004. The late USDA breeder developed Rainier cherries at WSU's research station in Prosser in

1952. Back then, Fogle told *The Times*, "we didn't really understand the genetics of cherries."

Fogle had been looking to create a new Bing variety to help extend cherry season. The richly red Bings and Vans he crossbred carried a recessive gene, and the result was P 1-680. It stood out, Fogle told *The Times*, "from the moment I first saw it ripen."

Golden-hued Rainier cherries were first released in 1960. Despite their unusual good looks and natural sweetness, Whiting says, they were "initially sold out as a pollinator. The Bing itself is sterile and needs a compatible pollinator tree to fertilize its flowers." Rainiers were largely planted to support Bing crops until the early 1980s, when growers really began to realize their potential on the fresh market. "Now," Whiting says, "it is the premier cherry around the world."

Sweet cherries are thought to have come from the region between the Black and Caspian seas, and cultivation is believed to have begun with the Greeks. Colonists brought sweet cherries to the New World, and they arrived in the Pacific Northwest in 1847 when Henderson Luelling traveled from Iowa to Oregon with nearly 1,000 trees and shrubs. His younger brother, Seth, later developed the Bing, named for his Chinese workers' foreman, Ah Bing.

Today, Washington state is the top producer of sweet cherries in the country. According to the Washington State Department of Agriculture, sweet cherries are the state's number six cash crop with a value of about a half billion dollars.

Growing cherries of any variety is a fickle business. Birds love them. And there's that thin skin. A summer rainstorm can split it. Rainiers are super sensitive—not just on the tree but also during the process of picking and packing. "They're not easy to grow," Whiting says. "The number one issue is bruising, and when they're damaged it shows up. With most cherries, the color of the skin can mask the bruising." Rainiers, he says, need "to be handled with care and patience."

Growers pay more for that special attention. "They typically have their best pickers handle their Rainiers," Whiting says. "They pay

them at a higher rate to go slow." The idea is to encourage workers to exercise caution, select fruit for optimal color and size, and gently lay—not drop—the tender fruit into a bucket worn around the neck. In Prosser, at WSU's Irrigated Agriculture Research and Extension Center, Whiting does research to support the entire sweet cherry industry. He works with growers to improve yields, production efficiencies, and labor-saving techniques as part of WSU's Pacific Northwest Sweet Cherry Breeding Program.

WSU re-established the cherry program in 2004, after a hiatus of two dozen years, to develop superior new cultivars for the Pacific Northwest sweet cherry industry. One area of research is breeding resistance to diseases, particularly powdery mildew, which attacks both the foliage and fruit. "It's primarily a Pacific Northwest problem," says Per McCord, WSU's new cherry breeder and associate professor of stone fruit breeding and genetics. "It won't kill the tree, but it will certainly make the fruit unmarketable and that's why it's such a challenge. There's also a risk of losing the ability to control it via chemicals, so that makes breeding an attractive option."

Rainiers could still be improved. They, too, are susceptible to powdery mildew. And, like both of its parent varieties, Rainiers require

a compatible pollinator. "That's one area you could improve upon for the grower: to produce a Rainier cherry that's self-fertile and doesn't require another cherry to pollinate it," McCord says. "If we could develop a blush variety that was earlier or later than the Rainier, we could increase the market window for that class of cherry."

Meantime, these blushing beauties—plump, juicy, and a good source of Vitamin C—are best enjoyed fresh, according to *Cook's Illustrated*. Use raw Rainiers to top desserts or add a pop of color to a green salad. Chop them up for salsa. Muddle them into a cocktail. Eat them straight from the bowl. They're simply too pretty to tuck into a pie. But, if you want to bake with them, consider WSU executive chef Jamie Callison's Rainier Cherry Clafoutis. His take on the firm French custard—traditionally made with whole dark sour cherries from the Limousin region—is completed by orange zest and a splash of orange liqueur.

McCord personally likes fruit with a bit more acidity. But, no matter how Rainiers and other sweet cherries evolve, McCord says, they're "always going to be a premium fruit. I don't think we're going to see bargain sweet cherries. It'd be like saying a bargain BMW." *



PHOTO: NATALIA ESTMA

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Where have all the frogs gone?

BY REBECCA PHILLIPS

ILLUSTRATION ESTHER NG

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Below: Allan Pessier holds a Pacific chorus frog. Photo Henry Moore
Opposite: Caren Goldberg at Virgil Phillips Farm Park. Photo Robert Hubner

It happened again that morning. During their rounds, zookeepers found another tank of dead blue poison dart frogs. The tiny azure amphibians, native to South American rainforests, had been enjoying a successful breeding program at the Smithsonian National Zoo. Now, inexplicably, they were dying from a mysterious skin disease and the cause remained elusive.

The year was 1996 and Allan Pessier ('96 DVM) had just begun a pathology residency at the National Zoo. As a lifelong amphibiophile, he was more than a little intrigued when the deceased dart frogs began arriving in his laboratory.

Together with senior pathologist Don Nichols, Pessier used an electron microscope to search for the likely culprit. It wasn't long before they zeroed in on what appeared to be an unusual fungus called *Chytridiomycetes* or "chytrid" that typically grows on decaying vegetation.

Seeking verification, Pessier used their pre-Google web browser to locate one of the world's few experts on chytrids, a mycologist named Joyce Longcore. Longcore agreed their specimen seemed to be a chytrid but was unlike anything she'd ever seen before. Eventually, she identified it as an entirely new species and the first chytrid fungus known to infect vertebrates like frogs. They named it *Batrachochytrium dendrobatidis* or Bd.



Around the same time, researchers in Australia and Central America announced the discovery of a protozoan they believed was causing the ominous global decline in wild frogs that had been occurring since the 1970s. Incidents of these massive die-offs had risen sharply in the 1980s but no one could pinpoint exactly why.

When Pessier's team saw photos of the suspect microbe in the *New York Times*, they immediately knew the organism was not a protozoan, but was instead Bd, the chytrid fungus they had just identified. With a dawning awareness, they recognized their discovery could have enormous implications.

"We thought we'd discovered a cool thing in zoo frogs," says Pessier. "But, there was this window of time when we realized we may be the ones who knew exactly what was causing these enigmatic global die-offs. That's pretty exciting, especially when you're just a year out of veterinary school."

In time, their theory was validated and Pessier began providing diagnostic help to investigators in Central America. Bd thrives in a cool moist climate, so frogs living in mountainous cloud forests suffered the most, particularly those in Panama like the iconic golden frog now thought to be extinct in the wild.

"It didn't hit me how devastating it really was until I went out into the Panama rainforest in 2006," Pessier says. Before the chytrid fungus went through, the forest was deafening with frog calls and they covered the ground everywhere you stepped. But after the chytrid fungus, it was completely silent and you had to search for 45 minutes to find a single frog.

"Bd has truly earned its name as the most deadly pathogen ever recorded," he says, speaking of the worldwide analysis published last March in the journal *Science*. The report concluded that Bd, unrivaled in its ability to kill untold hundreds of millions of frogs, was responsible for the decline of more than 500 species with at least 90 forced into extinction. Deadlier than the 1918 influenza pandemic or medieval bubonic plague, Bd is the worst infectious disease known to science.

In 2017, Pessier, Nichols, Longcore, and colleague Elaine Lamirande were honored with the Golden Goose Award from the American Association for the Advancement of Science. The award is given to groups of researchers whose seemingly obscure, federally-funded research has led to major breakthroughs in medicine, science, technology, the environment, and more.

Today, in an office adorned with frog paintings and posters, Pessier has returned to Washington State University as a pathologist in the Washington Animal Disease Diagnostic Laboratory (WADDL) and clinical associate professor in the College of Veterinary Medicine. With 20 years' experience in aquatic pathology, Pessier is the "go to guy" when zoos and other organizations have tough questions about amphibian disease. Each year, WADDL receives hundreds of samples from people across the world seeking Pessier's expert knowledge and diagnostic skills.

But Pessier is just one of several WSU scientists taking amphibian research to the global level. Caren Goldberg in the School of the Environment is a pioneer in the development of environmental DNA (eDNA) techniques that simplify the ability to screen for pathogens like Bd that can be spread through the international pet trade.

Other researchers in the School of Biological Sciences are investigating physiological and environmental stress factors that could help trigger mass amphibian die-offs. Their findings have applications for many other species as well.

Together, this diverse group of scientists has created a synergy that puts WSU in the national spotlight as an emerging center for amphibian research. They share a critical goal: To prevent the occurrence of a second fungal pandemic—an explosive threat looming just over the horizon.



Rain clouds are gathering but, for the moment, it's a sunny April afternoon as I follow a muddy path around the little pond at Virgil Phillips Farm Park just outside Moscow, Idaho.

Making my way through trees and cattails, I join assistant professor Goldberg, who is busy assembling her eDNA collection system. Dressed in jeans and tall rubber boots, she kneels in faded grass near the edge of the water where two male Columbia spotted frogs have staked out territories.

Goldberg quietly lowers a plastic tube into the pond and uses a hand pump to draw water up through a filter and into a flask. With tweezers, she carefully removes the wafer-like filter and stuffs it into a test tube.

Back in her laboratory, she will extract DNA from the skin cells, feces, urine, and other bits of material left behind by aquatic inhabitants. The DNA is then run through assays to identify target species of fish, amphibians, snails, turtles, and other creatures. With that one sample, Goldberg can also detect rare and invasive species as well as disease-causing organisms like Bd and ranavirus.

As one of the world's leading amphibian eDNA researchers, Goldberg analyzes more than a thousand samples each year from all over the world, including endangered frogs from the Panama forests visited by Pessier. She and her team have developed nearly 50 assays, each uniquely designed for a particular species.

Not only does eDNA improve and simplify the process of monitoring aquatic species, it's also safer, more efficient, and minimally invasive. Now, instead of tromping through fragile wetlands—turning

over rocks and kicking up mud, which can harm the animals living there—scientists can get answers with only a few water samples.

When Goldberg first learned of the concept as a graduate student in 2008, it transformed her world.

"As an ecologist, I spend a lot of time looking for rare species out in the field and not always finding them even though we know they are probably there," she says. "When I heard about eDNA that detected amphibians in water, I was so excited. I knew it could have huge implications for managing and conserving rare species."

By 2011, Goldberg had a contract with the Department of Defense to bring eDNA surveillance into the real world as a practical tool for wildlife conservation. Joined by fellow researchers Katherine Strickler and Alex Fremier in the School of the Environment, they set out to develop reliable techniques that would enable them to detect rare amphibians and fish on military bases across the United States.

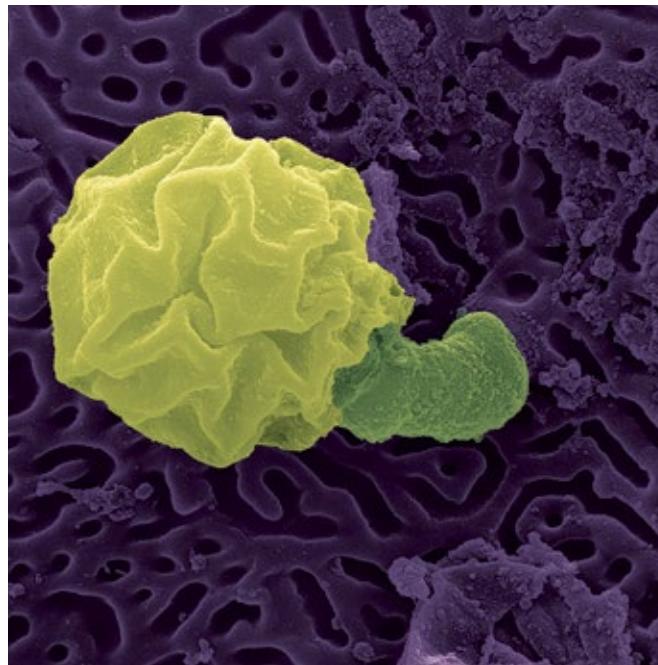
"Our military bases are some of the last preserved parts of ecosystems that have otherwise been developed or plowed under," Goldberg says. "They contain a lot of the nation's endangered species. If you think about it, even a bombing range, for example, is much less disturbance to a salamander than is a shopping mall."

She began the project by adapting protocols for working with poor-quality DNA that she'd learned as a doctoral student at the University of Idaho. In 2015, she joined WSU and designed her lab to use these new methods for processing eDNA samples.

Recently, Goldberg, Strickler, and wildlife biologist Jeff Manning in the School of the Environment were awarded another \$1.4 million DoD contract to continue improving eDNA detection especially for



species that are very rare and present in low numbers. They want to increase test sensitivity to handle some of nature's most challenging conditions such as highly acidic water or very large ponds.



The biggest challenge for eDNA surveillance, however, may lie in the frontline battle to prevent a deadly salamander fungus from entering the United States and other vulnerable parts of the world.

In 2013, scientists were alarmed to discover massive salamander die-offs occurring throughout Europe from a new strain of chytrid fungus similar to Bd. Known as *Batrachochytrium salamandrivorans*, Bsal, or salamander chytrid, the disease is especially threatening to the United States, a global hotspot for salamander biodiversity.

Thanks to lessons learned during the frog Bd pandemic, the new infection was quickly identified and international barriers were established to prevent spread of the pathogen. By 2016, the U.S. Fish and Wildlife Service had banned imports of 201 salamander species.

Jesse Brunner, associate professor in the School of Biological Sciences, is on the National Bsdl Task Force and says the fungus has not yet been detected in North America.

"That's really a good thing," he says. "Allan Pessier, Caren Goldberg, and I are working on developing better approaches to screen animals and try to prevent it getting here. Millions of amphibians are imported into the U.S. every year, mostly through the pet trade."

"It's very unregulated—we know Bd is found in some of these animals," Brunner says. "We want to use eDNA testing to screen a whole shipment at a time rather than test each animal individually. The idea is that we can collect a handful of samples from the water

and have a high probability of ensuring there isn't infection in that group of animals."

Worldwide surveys indicate these infectious fungi likely emerged from Asia where over millions of years, the local amphibian species developed a resistance to it.

"The exact origin may be uncertain but what is clear is that the movement of animals for the pet trade is moving pathogens like Bd and Bsdl around the world," says Brunner. "So, we can expect to see more emerging dangerous pathogens in the future rather than fewer."

And while Asian frogs and salamanders seem to have a natural immunity, the fungus can wreak havoc when moved to a new location



Above, left: Electron microscope image of Bsdl zoospore.
Micrograph Allan Pessier/Franceschi Microscopy and Imaging Center.
Above, right: Jesse Brunner with painted turtle. Courtesy Jesse Brunner. *Opposite, left to right:* Erica Crespi studies wood frogs in New York. Courtesy Erica Crespi. Electron microscope image of Bd zoospore. Micrograph Alex Hyatt/CSIRO/AAHL



or into a novel species, he says. "That's when you often see some of the worst outcomes."

The Bd fungus is a devastating example. Brunner says frogs rely on their skin for breathing as well as electrolyte balance. When Bd invades skin cells, it disturbs the frog's ability to regulate water and electrolytes, which leads to changes in the blood that essentially cause a heart attack.

"It's sort of like whole-body athlete's foot that ends up killing them," he says.

Though most salamanders breathe using both lungs and skin, it's a similar story when they're infected with Bsdl—within days the fungus causes ulcers and sloughing tissue that lead to apathy, loss of appetite, and death. As one researcher put it, "It's death by a thousand holes."

Besides the fungus, Brunner is also concerned about one more "cold-blooded killer" called ranavirus that can cross-infect fish, reptiles, and amphibians.

"Ranavirus has a global distribution now," he says. "It can be a really nasty infection—the virus gets into every bit of tissue they have, every cell, where it causes massive damage and organ failure. Thankfully, it doesn't replicate at warm-blooded temperatures."

The curious question is how some animals manage to control these viral and fungal infections so they don't cause severe illness or death. Part of Brunner's research is aimed at determining the factors that lead to this resistance and why catastrophic losses occur in some places and not others. He and his fellow scientists are following several clues.

Erica Crespi, a physiologist and associate professor in the School of Biological Sciences, studies the way stress affects an amphibian's early development. Frogs and salamanders are very sensitive to environmental changes which can trigger spikes in their stress hormone corticosterone.

"Just as in pregnant mammals where elevated stress hormones can cause premature birth, high corticosterone can shorten an amphibian's development time and affect how the brain and lungs develop and cause other lifelong impacts," she says.

Brunner says the idea that long-term chronic stress can suppress the immune system and make it harder for an animal to fight off infections has been studied by biologists for decades.

"In its simple form, the hypothesis says that anywhere we see human activities or other stressors, we should see big outbreaks of disease, but it's not that simple. Stress doesn't always translate into outbreaks."

He and Crespi are trying to determine how individual animals respond to environmental stressors such as increased salinity or water temperature, and how that scales up to negative population outcomes like a pond full of floating frogs.

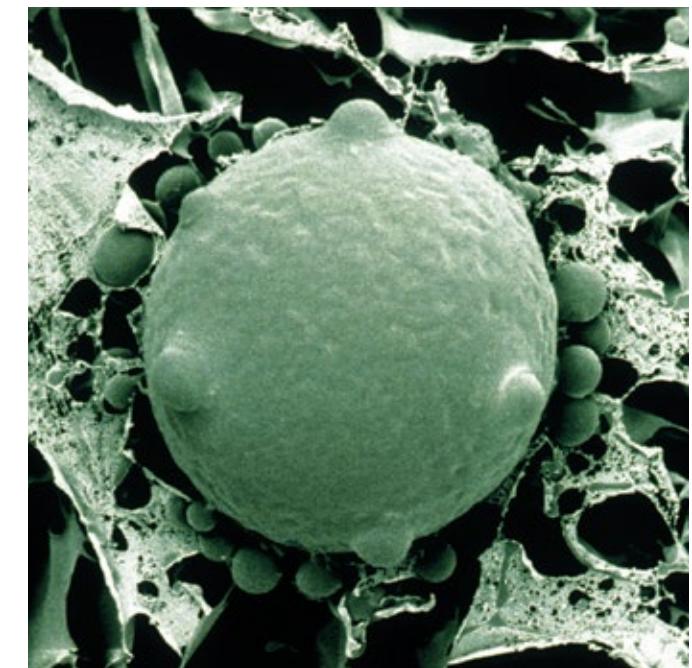
"The underlying stress mechanisms we're studying apply to all sorts of animals like elk, fish, or any other species—and disease outbreaks in general," says Brunner.

The investigation continues at WSU Vancouver, where Jonah Piovia-Scott, assistant professor in the School of Biological Sciences and a member of the National Bsdl Task Force, is exploring the effects of climate change on chytrid fungal diseases.

"Neither Bd nor Bsdl tend to do well when it's hot," he says. "So, some aspects of climate change may actually help amphibians with these pathogens. But other aspects may make them more susceptible. For example, if ponds dry up earlier in the season, it will decrease the amount of time amphibians have to develop. The stress will force them to develop faster, which may make them more susceptible to disease later in life."

Piovia-Scott is often asked why we should care about amphibians and his answer is unequivocal.

"These amazing, beautiful, and wonderful organisms have intrinsic value, and are a part of our world we're losing quite rapidly," he says. "They are also integral components of the ecosystem—an important food source for some animals and they themselves eat insects, worms, and snails. Like salmon who are eaten by bears and fertilize the forest, amphibians are also an important link between aquatic and terrestrial systems."



take a field trip to the frog pond: magazine.wsu.edu/extra/on-goldberg-pond

Indeed, isolated and far away, every frog and salamander die-off creates a domino effect that ultimately impacts the planet. Streams that were once crystal clear turn green without tadpoles to eat the algae. Human infections like malaria and dysentery spread more rapidly without amphibians to eat mosquitos and flies.

"It's a very good example of how small the world has gotten," says Pessier, who also specializes in biosecurity and reintroduction programs for endangered species.

"Diseases like Bd and Bsal are moved around by people. Domestic cows don't move from Asia to the U.S. without a huge number of diagnostic tests. But for frogs, you just need the right permits and you can move them all over the world without concerns about disease."

"Once Bd has moved through an area, the amphibian biodiversity drops to virtually nothing and there is no way to mitigate the fungus in the wild," he says. "So, the last resort strategy is to develop survival assurance populations (SAP). We capture threatened species to preserve their genetic diversity and then try to breed and maintain a colony in captivity until they can be reintroduced to the wild, once we have a way to deal with the fungus."



Jonah Piovia-Scott (*left*) and his student research assistants study amphibians in a WSU Vancouver wetland. Photo Laura Dutelle

Pessier works with SAP in Madagascar, Ecuador, Panama, and many other areas around the world to diagnose disease issues such as vitamin A deficiency in captive Panamanian golden frogs.

Closer to home, he is joining Crespi and Goldberg to protect Washington's last surviving remnant of northern leopard frogs in the Columbia Basin. Working with the Washington Department of Fish and Wildlife, they hope to reintroduce and expand populations within the state.

Their intentions clearly reach beyond academia to a deeper love of the Pacific Northwest and our amphibian wildlife. Drafted in the spirit of Teddy Roosevelt, their proposal reads, "Do what you can, with what you have, where you are."

It's a philosophy all five faculty members stand behind. Their shared interests and mutual support have multiplied efforts to protect frogs and salamanders throughout the world.

"Conservation is an interdisciplinary science," Crespi says. "Having Jesse, Caren, Allan, and Jonah here allows me to do projects I could never do in isolation." *



Clockwise, from top left: Gómez in wetland with trap; close up of spadefoot toad; Columbia spotted frog egg masses. Courtesy Erim Gómez

The legacy lives on

BY REBECCA PHILLIPS

There were thousands of them plus long-toed salamanders and tree frogs, the three most common amphibians in the area.

"Since then, the goldfish population has rebounded and amphibian numbers have dropped dramatically."

A large part of Gómez's research involves developing wetland conservation plans specifically tailored to protect the different types of Palouse amphibians.

Long-toed salamanders, for example, can live in a variety of habitats—such as seasonal wetlands, grasslands, or woodlands—as long as there are no fish. It's similar for Pacific chorus frogs.

Columbia spotted frogs, a species of concern in Washington state, need a more permanent wetland. Gómez says they are typically found in wetland complexes on the eastern edge of the prairie.

Western toads, on the other hand, prefer the Snake River, as do bullfrogs, an introduced species and voracious predator. Large enough to coexist with fish, bullfrogs can also be seen in parks and in some wetlands.

The rare spadefoot toad is unusual in that the adults are nocturnal and stay underground during the day, says Gómez. He accidentally discovered their tadpoles in a drainage ditch where the farmland hadn't been plowed in several years.

Despite such biodiversity, Gómez says there is still room for improvement. His number one counsel is never put goldfish or bullfrogs into wetland ponds.

"Number two is don't plow or plant agricultural fields right up to the edges of wetlands," he says. "Create a buffer zone. Even the ponds that dry up for a bit can still be very important for amphibians as they metamorphose into adults. The wetland doesn't have to hold water year round—they just need moist soil to survive." *

feature

BY BRIAN CHARLES CLARK



STAFF ILLUSTRATION

What's missing in video gaming.

As soon as the students put on the virtual reality headsets in Don McMahon's lab, the exclamations of amazement begin.

Two of the students are exploring Google Earth. One, wearing the goggles, has her hands out, like she's trying to maintain balance. The other lightly grips her classmate's wrist, as if to steady her. "I ended up in Bulgaria!" "You're an international traveler!" "Oh, this is really cool; can I move to France?"

Another student is apparently underwater. "This is terrifying! I'm swimming with sharks!" she says, sounding more thrilled than frightened.

Yet another student is immersed in *Space Station Experience*. At first, she seems fine: "I'm, like, in a spaceship!" But then she moves and gets lost in space. After McMahon steps in and guides the student's hands to the navigation controls on the paddles she's holding, she heaves a sigh of relief. "I found my way back to Earth."

Virtual reality (VR) and augmented reality (AR) have the potential to revolutionize the way we teach and learn. For medically fragile and physically disabled students, VR lets them go where they never could in reality. And for behaviorally challenging students, the engagement offered by VR and AR gives teachers a precious tool that opens the possibility of their students learning new, more positive behaviors.

But video games, including AR and VR, also have their dark side. The games that hit the top of the bestseller list are often rife with violently racist and misogynistic stereotypes. In one version of a now-classic game, *Grand Theft Auto* (GTA), the player might learn that if they stop their car next to a female character, she'll hop in. She's a prostitute; there's an exchange of money for services. If the player then drives around the corner, though, he can simply murder the woman—and the player gets his (or perhaps her) money back.

There's the good, the bad, and the ugly when it comes to games and gaming technologies. While Washington State University teaching and learning professor McMahon and his colleague Jonah Firestone based at WSU Tri-Cities focus on the promise of the good, it's the bad and the ugly that have caught comparative ethnic and American studies professor David Leonard's critical gaze.



What does justice look like?

Leonard is one of the first scholars to analyze and kickstart conversations about the stereotypes in video games. As others spent countless research hours trying to determine if the violence in video games resulted in real-world violence, Leonard was asking questions about what games like GTA were saying about urban life through grotesque racial stereotypes.

When his cousin showed him the hidden “trick” about killing prostitutes, Leonard says, “Very little surprises me but I was struck in that moment about how what we’re seeing in the video game world would not be seen on TV, on film—and it’s interactive.” GTA is rated for adults but is often played by children, and thus became one of many pivotal moments for Leonard, a white male who had begun to seriously question the types of representations and narratives available in virtual reality.

“If my understanding of urban life in Los Angeles was simply as a place to play because that’s what *GTA San Andreas* taught me, showed me, impressed upon me,” Leonard says, “then the conversation becomes about, ‘Well, who is living there? What is *their* everyday experience like?’”

“Conversation” is an important word for Leonard because, he argues, we simply don’t have enough of them. At least, we don’t engage each other in the uncomfortable conversations about race and sexism that need to be talked through in order to come to terms with the bad and the ugly—not just in video games, but in the real world, too.

“There’s a silencing of those voices, of those pleas, of those tears,” emanating from the victims of violence and those oppressed by systemic racism and brutalizing stereotypes. “We sandpaper over these issues by ignoring them, or by saying ‘look how far we’ve come’ or ‘at least it’s not this’ other bad thing. So it’s down to me to say, ‘No, things are not so smooth; there are things we need to address.’ And it’s not me opening that conversation, I am walking beside those who are doing that work.”

The Overton Window is the range of what’s acceptable to talk about in public. Conversations about sexual assault and harass-

ment were, until recently, mostly silenced; the window was closed. But with the rise of the #MeToo movement, the window has been thrown open and sexual misconduct is now part of an international conversation. And with #BlackLivesMatter, so are conversations about race.

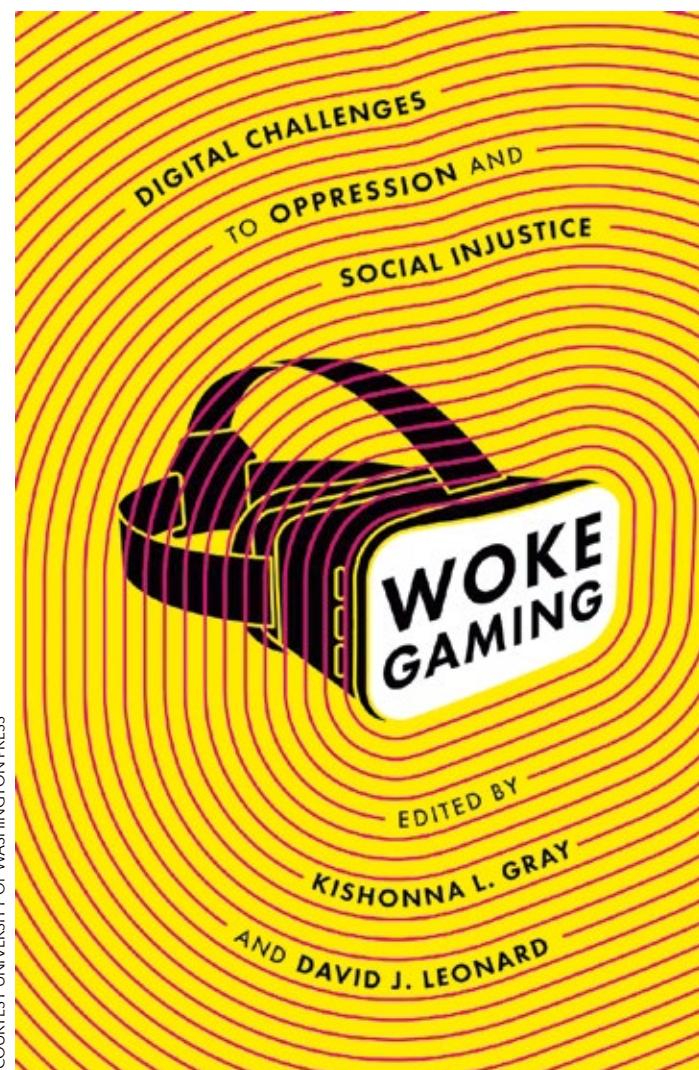
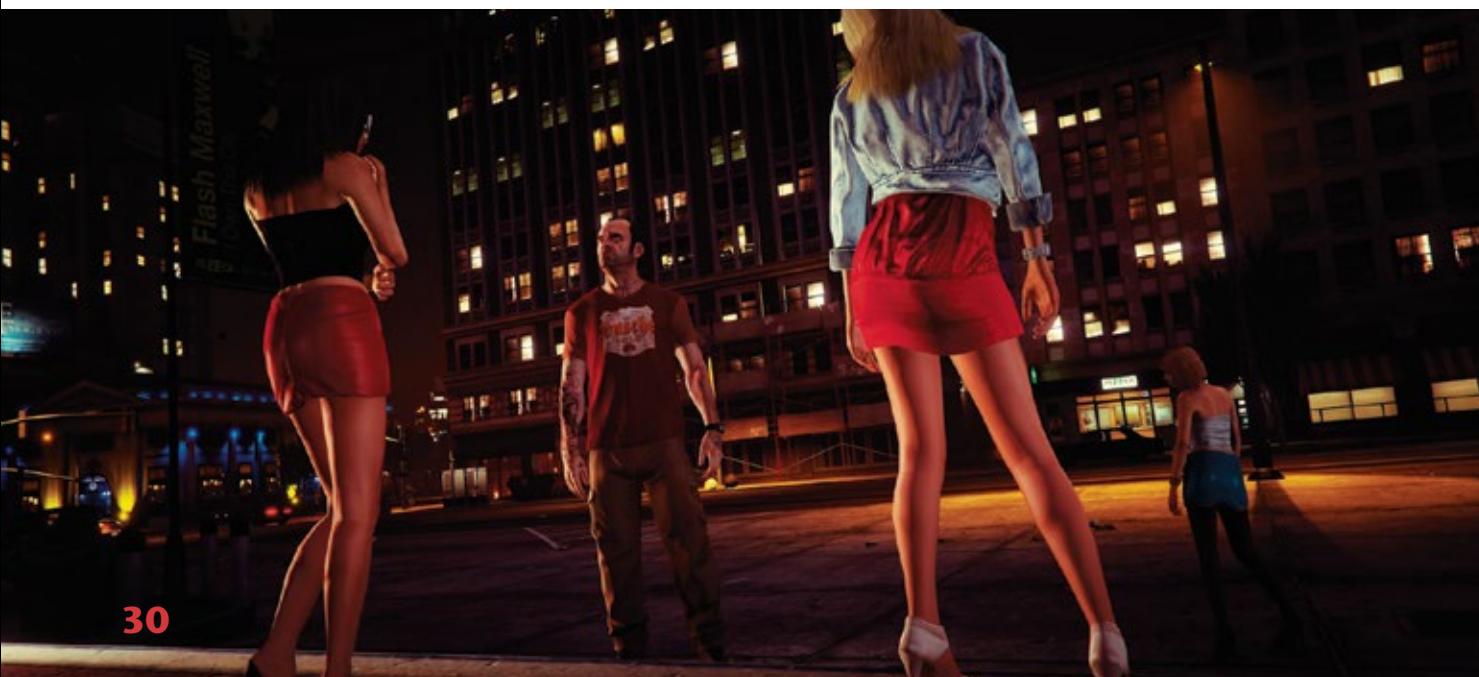
Leonard recently coedited a collection of essays, *Woke Gaming*, that opens the window to conversations about not only racism and sexism in games but what comes after. The collection, Leonard and his coeditor Kishonna Gray write, rose “from the ashes of Gamergate.”

Gamergate began in 2014, when several women involved in the gaming community were targeted with threats of rape and other forms of violence, as well as falsely accused of unethical behavior. Developer Zoë Quinn, in particular, was targeted for “crafting a nontraditional game”—*Depression Quest*—“and for suffering from depression.” Brianna Wu, also a developer, mocked the (mostly, and mostly anonymous) males of Gamergate on Twitter but the tables were rapidly and rabidly turned on her, too, as threats of violence streamed across the internet.

But the threats weren’t confined to the net. Both women and others (including Anita Sarkeesian, a feminist video game critic who received multiple sexually charged death threats) were “doxxed,” meaning personal information, including home addresses and phone numbers, were published on social media and elsewhere. Worse, gamers seeking to drive women out of the field have resorted to “SWATting,” making an emergency call to police, accusing their victims of bomb building, hostage holding, or drug manufacturing. SWAT teams show up with sometimes lethal consequences for victims. Fearing for her life, and those of her family and friends, Quinn had to flee her home and cancel public appearances.

All because of a game about depression! But the stakes are high. The video gaming industry is a \$135 billion per year enterprise. Games like *Fortnite* and the augmented reality-driven *Pokémon GO* are rivers of cash for their developers, so feeding the expectations of gamers is critical to profits. As Leonard and Gray point out (quoting another scholar), there is a “hegemony of gaming practices that

(POSTED BY THURBROCK ON VGTRAINERS.COM)



COURTESY UNIVERSITY OF WASHINGTON PRESS

Leonard suggests that “a game that highlights the importance of water and the ways in which injustice, racism, war, and violence become obstacles to having access to water is something I can see,” Leonard says. “Games can foster that critical conversation.”

Or simply taking advantage of missed opportunities would be helpful, Leonard argues. “A war game only shows the field of battle. The only thing is your character or your infantry fighting an enemy. The worst that might happen is that your character might die—and then you just start over.” But what if, to get your “health score” back after being wounded in action, “the game takes you to the hospital for rehabilitation for six months.” Even if the recovery hiatus were a short, animated interlude, the consequences of violence would be exposed and laid bare for further consideration.

“There is nothing about what happens to that soldier when their tour is over,” Leonard emphasizes. “What happens to that soldier in terms of PTSD? Neither do we see that family living in Baghdad—what we see are abandoned cities,” like the city-center playgrounds of *GTA*. “We don’t see those who are living alongside war” just as we don’t see the urban families working, teaching, learning, playing, and loving.

If our consumption of media were neutral and without consequence, none of this would matter. But all media, including video games, Leonard says, “shape our opinions about war,” about romance and sex, about who gets to do what to and with whom. “So we can think about the ways that video games tell stories and then erase so much about the story.”

Challenging the script

Stacey Hust, a WSU professor of health communications, together with her colleague from the Department of Human Development, Kathleen Rodgers, uses scripting theory to shed light on the ways in which media consumption shapes our views of gender, sex, and romance. Scripting theory argues that we assign meaning to feelings of sexual attraction and other physiological sensations through culturally constructed scenarios; in other words, we explain why we feel what we do through interactions with peers and media.

“Video games,” says Hust, “like other media, largely promote traditional gendered scripts in which men are shown as dominating and sexually aggressive and women are shown as sexual objects.”

Exactly how video games shape and script our ideas about sex and violence is the subject of heated debate in academic (as well as parenting and policymaking) circles. But one thing is clear: over the past couple of decades, a body of research supporting the contention that violence in games begets violence in the real world has grown. A 2010 analysis, for example, of previous studies of the relationship between game violence and real-world behavior found that the connection is incontrovertible. The paper’s epigram quotes Nina Huntemann, a video game scholar, who points out that when you’re playing, “you’re not just moving your hand on a joystick, but you’re asked to interact with the game psychologically and emotionally as well. You’re not just watching the characters on screen; you’re becoming those characters.”

“For me,” Leonard says, “justice is thinking about privilege. Privilege is an unearned opportunity,” like being white and male in a culture dominated by white males. But, Leonard adds, privilege is also the freedom to live untroubled by fear and want. As a woman, or a gay or transgender person, or a person of color, justice is “being able to walk across campus at 11:00 p.m. and not fear. It’s being able to put on a game and see yourself. It’s people living in a world with access to the essentials of life.”

But what would that even look like in a gaming industry dominated by the adrenaline rush of committing mayhem at high speeds, as in *Grand Theft Auto*, *Mortal Kombat*, or numerous other games, where the play, as Leonard says, is “all about the fight and the edge-of-your-seat suspense?”



Ninety percent of kids in the United States play video games (which rises to 97 percent of children ages 12–17), and 90 percent of those games include mature content, including violence. *Manhunt*, *Thrill Kill*, *Gears of War*: the titles speak for themselves.

By 2016, and in view of mounting evidence of the correlation between violence in games and aggressive behavior, both the American Psychological Association and the American Academy of Pediatrics began advising parents to not allow children and teens to play violent videogames.

As Gamergate shows, though, it's not just the games that contribute to socially maladaptive scripts; it's the culture of the gaming community itself that is often victimizing or ostracizing girls, kids of color, and gender nonconforming people. Games like *Fortnite* are played online, often with thousands, or even millions, of players at once. Game-associated chat systems allow players to collaborate and strategize together, but also to bully players who, for whatever reason, are deemed socially unacceptable.

Teaching tech

As dire as this culture of hyper-violence, misogyny, and racism appears, there is a flicker of hope among scholars and developers.

As Hust points out, "Video games allow for the exploration of gender roles and gender identity in a virtual space as the player can choose an avatar that is not the same as his or her biological sex. Additionally, some video games provide an alternate script for women as they include physically strong female avatars who often complete the same tasks as male avatars. Oftentimes, these female avatars are sexualized, however."

It's that flicker that keeps Leonard thinking critically about gaming and pushing the conversation. It's like hip hop, he says, the music he grew up with. "If we say that hip hop is sexist by defining it by what has the most visibility, then we miss all the artists who are redefining the genre." If all we hear are Jay Z or Snoop Dogg, then we miss, for instance, Aesop Rock, whose rapped vocabulary vastly exceeds Shakespeare's.

"Same with the gaming community," Leonard says. "Gaming is not only 'over here,' it is a large diverse community dreaming and realizing what scholar Robin Kelley called 'freedom dreams.' Gamers cut across communities and gamers want different kinds of games that do different kinds of work that inspire different kinds of imagination—that is a step forward!" Which is one reason why he and Gray edited *Woke Gaming*.

"We challenge the idea that there is a core gamer community that wants a particular kind of game. But we still need to have a critical conversation about why we find joy and pleasure in committing acts of virtual violence."

Without dismissing the prevalence and demonstrably malign influence of negative social tropes in games—"there's a lot of that!"—Firestone, like his College of Education colleague McMahon, sees gaming as full of teachable moments.

Firestone has a historical perspective that helps put gaming technologies, and their uses and abuses, into perspective.

"Technology has always met resistance," he says. "Socrates against writing!" As Plato sat at his feet, writing down what the wise guy said, Socrates warned that writing would rot memory and leave us unable to recite the oral literature of the *Iliad*, the *Odyssey*, and other culturally important works. "The printing press—civilization ends if everyone knows how to read!" Especially, the argument went in Gutenberg's day, if everyone can read the Bible for themselves. "And if you stick your kid in front of a TV for eight hours a day, and think they are going to learn something—you are going to be damaging that child. But if we approach technology in a systematic, thoughtful way, it can be useful."

Firestone and McMahon are especially interested in "educational hacking." How do undercompensated teachers in underfunded schools engage and teach kids in an equitable way?

"Every student should have a great educational experience," says Firestone. But, given linguistic, cultural, behavioral, and accessibility differences, that simply wasn't possible until recently. Special education programs segregated certain students from the

COURTESY RESPECTIVE INDIVIDUALS



DAVID LEONARD



KISHONNA GRAY



STACEY HUST



KATHLEEN RODGERS



JONAH FIRESTONE



DON MCMAHON

standard-ability ones, for instance. That stretches resources (teachers' time and classroom space, for instance) to the breaking point for many communities.

Now, Firestone says, technology is beginning to change that. "WSU is invested in culturally responsive pedagogy, the idea that instead of saying a student has a deficiency because of X, Y, or Z, and we need to fix it, we want to understand that student's strengths, their background, what do they have that they can bring to the table, and how we can use that to educate everybody."

Part of that cultural sensitivity might be getting teachers to visit students at home to see how they live. But that, Firestone points out, is a big ask of already time-challenged teachers.

"I can loan a 3-D camera to a student. They can use that to create an immersive home-visit experience that can be brought back to school and shared with everyone." If empathy is, in part, imagining a walk in another person's shoes, then VR helps literalize that experience in ways multiple participants can share and discuss.

"Those cameras," Firestone says, cutting to the bottom line, "are not that expensive. And AR and VR are on everyone's phones already." While emphasizing that "this stuff in no way replaces classical learning techniques, lectures, reading, writing, labs," they do open up possibilities "that have never existed before."

Indeed, what Firestone and McMahon advocate is in some sense a return to that most basic of pedagogical goals, the teaching of inquiry. "The way you read a picture book to kids," Firestone says, "is to ask, 'What happens next?' That's how you model inquiry for kids. So you don't want to leave them—or anyone—to their own devices."

Firestone, Leonard, Hust, and Rodgers—they all land in the same place. We've got to talk to each other about the issues we all contend with, and we need to talk especially with our kids, whether about race, relationships, violence, or privacy in a digital world.

Leonard talks about growing up with games and now playing with his child. Where once parents were advised to monitor their kids screen time and what they were watching on TV, "now it's what are you playing with your kids? And are you talking about what is being

violence in-game and in the world: magazine.wsu.edu/extra/video-game-facts

represented? And if you're a father, are you only playing with your son? Are you assuming your daughter doesn't want to play? And are you assuming your son *does* want to play, because maybe he doesn't."

If approached thoughtfully, most games, even violent, sexist ones, contain teachable moments. For McMahon, it might be a few minutes of AR basketball: "Play for five minutes, generate some numbers, and work on mean, median, mode, or other math lessons." For Firestone, it might be *Monopoly* or some other board game, ancient or modern, around which he can build a lesson and a curriculum.

But all this takes assessment, research, thoughtful consideration—and lots of conversation. McMahon says that the number one thing he needs are graduate assistantships; it takes a small army of grad students to do the time-intensive research that puts data behind assumptions about what works or doesn't.

"A lot of things get packaged and sold to schools. That's why we do research," Firestone says. "A VR program about cellular biology might look good, but has it been tested? Does it actually teach? I'm a big proponent of technology, but I'm an even bigger proponent of assessing that tech."

Otherwise, we end up with pretty pictures or, worse, distracted students full of misconceptions about how the world works. "The goal of my research," says Firestone, "is to make situations which are normally difficult to understand relatable."

For Firestone and McMahon, that might be geologic time, plate tectonics, evolution, or the nature of scientific inquiry itself. For Leonard, gaming might teach us about histories of racism, gentrification, environmental injustice, or the cost of war. For Hust and Rodgers, gaming might open up avenues of exploration to better understand how gender scripts are not biological destiny.

"This is why," Leonard says, "diversity is important. Technology is created by people. People bring their ideologies, identities, beliefs, their prejudices into the creation of tech, their understanding of who the market is, who the gamer is. If the programmers are not only all of a particular demographic but also bathe in privilege—what sort of world are they imagining?" *

A GIRL TRIES OUT VR AT WSU TRI-CITIES (PHOTO MAEGAN MURRAY)



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OL' CRIMSON FLYING ON A RIDE (FRAME WSU VIDEO SERVICES)

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BY TOM KERTSCHER



PHOTO BY ANDAYA SUGAYAN

I can do it!

As **Andaya Sugayan ('17 Comm.)** recalls it, her passion for women being involved in politics dates back to elementary school, when she learned women in America didn't always have the right to vote.

"It just struck me as unjust," she says.

By the time Sugayan got to high school, she was setting the highest sights. "I wanted to be president for a really long time," she says, recognizing even then how difficult that could be. "On the one hand, women were starting from behind, but on the other hand, I knew as a woman I could do really anything that I wanted to."

Sugayan (who still touts the fact that she played clarinet in the Cougar Marching Band) is a regional coordinator in the Philadelphia area at Inspire U.S., a nonprofit, nonpartisan group

that helps high schools conduct student-led voter registration drives in 10 states. Her previous political positions include working as a digital director for the Washington State Democrats, as a field director for Hillary Clinton's 2016 presidential campaign, and as deputy campaign manager for Matthew Sutherland ('16 Poli. Sci.) who ran for the legislature in 2017.

Not surprisingly, Sugayan has strong feelings about 2020 being the centennial of the 19th constitutional amendment being made into law and giving women the right to vote.

"Women tend to work really behind the scenes in the political process," she says. "We're seeing a lot more women being able to be the face of the political process. But there are still hurdles to overcome." For one thing, Sugayan wants to see attention focus more on women's ideas and their actual contributions to the

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ALUMNI profiles



Andaya registering voters with her handmade sign on July 4, 2018. Courtesy Andaya Sugayan

political process and not on the novelty of their candidacies.

A record number of women were elected to Congress in 2018 and, largely because of that, a record number of women are now serving in Congress. Moreover, after the 2018 elections, a record number of women are now serving in state legislatures across the country.

At the same time, it took nearly 100 years for a woman to be elected speaker of the House—Nancy Pelosi, in 2007—and, of course, the country has not elected a woman president.

Sugayan said she learned at Washington State “how every single person has their own role in the political process and how every single person’s strengths can benefit the political system. You don’t have to be a politician, you can be involved behind the scenes,” she says.

Not that that is what she sees for herself.

“I am really happy doing voter registration for the time being, but at one point in the future, I do plan to run for office,” Sugayan says. “My eventual goal is to be a (U.S.) senator because that’s pretty cool—1 in 100. And from there we’ll see, maybe I’ll want to be president after that.” *

With justice for all

BY BRIAN CHARLES CLARK

Why do people commit crimes? There are a lot of theories, says **Matt DeGarmo ('14 PhD Crim. Jus)**. Reasons range from needing to steal for simple survival to performing a cost-benefit analysis and deciding that crime does indeed pay.

When DeGarmo came to Washington State University to work on his doctorate, he says, “I was doing a lot of theory building,” trying to organize all the various theories of why people commit crimes. He says he was also interested in possibly working with Bryan Vila, now an emeritus professor of criminal justice who founded a hazardous tasks lab at WSU Spokane and wrote an influential book about cultural policing based on his experience training officers in Micronesia.

“But when I got here, I got into field research,” DeGarmo says. “I went to Chiapas,”

in Mexico near the border with Guatemala, “and stayed in a prison for a week.” The prison DeGarmo visited was home not only to kidnappers, murderers, and child molesters, but their wives and children as well.

“It’s like being in a small village, where you can see everything happen in front of you,” DeGarmo says. “There’s not a lot of structures, so people basically lived in hammocks with tarps over them to protect them from the elements.”

DeGarmo also studied drug markets in the Ozarks and St. Louis. He used a network of contacts to gain access to dealers and, once he earned their trust, interviewed them to better understand their motivations for working in the black market.

Now DeGarmo’s building up a robust criminal justice program at Blue Mountain Community College in Pendleton, Oregon. He’s training and supervising a student-focused security force, something the campus previously lacked. The paid student interns earn college credit as well as state certification as security guards.

Says DeGarmo, “We’re probably the only college in the U.S. with a student-only security team.” *



Matt DeGarmo critiquing forensic science students on their crime scene investigation in a field lab at Blue Mountain Community College in Pendleton, Oregon. Photo E.J. Harris/East Oregonian

the art of casting: magazine.wsu.edu/extras/video



VIDEO FRAME AMANDA DETERMAN

Casting an artful brush

BY ADRIANA JANOVICH

The idea came to him during a phone call. The artist and avid fly fisherman was talking with his brother when he suddenly wondered whether it would be possible to combine his two loves in a way he hadn’t seen before. Could he use the same tool to catch fish as well as make art illustrating their natural habitat? Could he paint the rivers he loves to fish with a fly rod instead of a brush?

“A good fly fisherman is going to be really precise with their presentation,” says **BEN MILLER ('01 FINE ARTS)**. “If you’re going to be that precise with where you cast, why can’t you use that same motion as a means of painting? You go out there and you experience the river, and you create art in the same manner.”

As soon as he hung up, Miller grabbed his fishing gear and painting supplies, and headed to the creek behind his house. “The

urge to try this was overwhelming,” he says. “There was a moment there when it just felt so good to be doing what I was doing.”

It still does. And Miller has been developing his unique technique ever since. The fly cast artist, now based in Bozeman, Montana, can be found at the Gallatin, Missouri, or Madison, casting his paint-laden line onto an easel set up next to or in the water to capture “the mood of the river. I’ve never heard of anyone else doing this,” he says. “It’s such a foreign concept to most people.” But, “to me, it just makes so much sense.”

Miller grew up in Darrington, a small lumber town in Snohomish County. His parents, Budd Miller ('75 Ani. Sci.) and Diane (Johnson) Miller ('75 Gen. St.), met at WSU. Miller studied art in Pullman for four years, then spent a year at Central Washington University to earn a K-12 teaching endorsement. After two years of teaching high school art in Cowiche, outside of Yakima, he returned to Darrington to work at the same high school he had attended. He taught there for ten years before moving to Montana to be closer to the famed rivers and streams and rich heritage of fly fishing.

Miller’s been fly fishing since he was eight years old. “I love fly fishing,” he says.

“My grandfather showed me when I was young, and I was hooked. I’d go fishing with my brothers. My parents would let me ride

my bike like a mile down the road to this small creek almost every day, and I couldn’t wait to do it. I would usually meet a friend, and it was amazing. We’d catch so many fish.”

Today, Miller has two rods for fishing and three for painting. Standing on the riverbank or in the water, he applies paint to a piece of yarn affixed to the end of his line. He casts the line to paint the same way he casts a fly to fish, but the target is a custom-built, seventy-pound, seven-foot, aluminum, A-frame easel typically set up 20 to 28 feet away. From afar, it looks like he’s fishing.

“Why paint with a fly rod?” an onlooker once asked him. “Why fish with one?” Miller answered. “There are far more effective ways to catch fish yet millions of folks around the world have subscribed to the fly fishing method.”

Initially, Miller tried painting with flies “but a fly cannot take the abuse of hitting a hard surface over and over again.” He also traded canvas for plexiglass to explore “the idea of trying to push the depth of water.” But, just as with the flies, the force of the line caused the material to shatter. Now he uses Lexan—an ultra-durable, clear polycarbonate—upon which he typically paints both sides to achieve his desired effect.

Miller paints fish in his studio before heading outdoors to paint water “from a fisherman’s perspective. A stream is nothing more than a moving palette of color,” he

ALUMNI profiles

says, noting he paints "backwards," adding highlights before painting the deeper, darker depths—instead of the other way around. "When you are fly fishing you look down at your fly box and make two decisions about your fly: what size and what color. I have a palette on my arm for mixing paints to match the stream, and I make the same decisions about paint: what size and what color."

Miller uses resin to give the illusion of depth and refracted light. Sometimes, he incorporates a wooden frame to give a piece a rustic look. He's tried painting year-round, including in Montana's sub-zero temperatures. "Your line freezes in mid-air. Some days," he says, "it's just counter-productive to go outside. You understand where you are and hunker down and wait it out. If it's a day you can go out and fish, then it's a day you can go out and paint."

Miller dreams of owning his own art gallery. He also hopes to expand Dutch Rogue Cove, his fly cast art business, as well as his reach—traveling around America to famed fly-fishing destinations, such as Wyoming, Colorado, and the Catskills.

He calls fly fishing "a meditation. You get the rhythm of the water and the casting, and pretty soon you're one with the river. Whether you're catching fish or not, that relaxation is, I think, why so many people do it. Creating a painting with a fly rod is part of that—and trying to memorialize this moment, this river, this place and time." *

Return to Red Mountain

BY BRANDON SCHRAND

It's a bright morning on Red Mountain, where three generations of the Williams winemaking family are gathered in their tasting room. The space is elegant and elemental. All stone, steel, wood, and windows.

Outside, vineyards trail off into the distance in undulating rows. John Williams ('61 Mat. Sci.), the patriarch, adjusts his well-worn WSU hat. His son, Scott Williams ('80 Ag.

Eng.), scans the view with an easy grin. The business, he says, is about the present as well as the future. That includes this very building. "This was built to be a 100-year building," he says.

A true legacy, the Coug family knows, is like a good wine: it takes time. That legacy, like this building, isn't going anywhere anytime soon. Scott mentions the Italian winemaking Antinori family, operating for twenty-six generations. With Chateau Ste. Michelle, the Antinori family established Col Solare, a winery and vineyard that abuts the Williams's property on Red Mountain. Their legacy, Scott says, "was an impetus for us thinking of the long term."

His son, Tyler Williams ('19 Vit.), a third-generation vintner, spent four years backpacking around the world and making wine in seven countries on both sides of the equator before coming home to Washington, where his family owns Kiona Vineyards and Winery. Instead of settling into the family business, though, the Gonzaga grad went back to school, enrolling in WSU's viticulture and enology graduate program in 2017.

"Tyler had the ability to take over winemaking for Kiona without getting a master's," says his father. "But I wanted him to get exposed to the research process."

Tyler will be joining his older brother, JJ Williams, Kiona's director of operations, in the family trade. Possessing an encyclopedic knowledge of the industry, region, and the business, he's quick to point out Kiona's many ties to WSU. "Four of our employees are, or have been in the graduate program," he says. "Five, if you count Tyler."

At WSU, Tyler was able to ground his worldly experience in science under the direction of his major professor, Jim Harbertson, and Thomas Henick-Kling, professor of enology and director of WSU's Viticulture



FROM LEFT: THREE GENERATIONS OF WINEMAKING BY THE WILLIAMS FAMILY—GRANDFATHER JOHN, FATHER SCOTT, AND SON JJ (PHOTO TRAVIS GILLETT), AND NOW SON TYLER (COURTESY WSU TRI-CITIES)

and Enology Program. "I felt very encouraged by the faculty here," he says. "And I have learned some fine corners of wine science that I wouldn't have otherwise been exposed to."

Exposure to research is exactly what he got, as evidenced by his graduate work. "We're assessing which types of acids are available to winemakers, and at which pH level their addition to a wine results in significant differences in that wine's microbial profile," he says.

That cutting-edge research is a dramatic leap forward from the conventional thinking back in 1975 when his grandfather John established Kiona Vineyards on Red Mountain.

Regarded as a pioneer in the state's wine industry, John grew up in Richland, where his father worked at Hanford during World War II. After graduating from WSU in physical metallurgy, he too took a job at the nuclear reservation, working as an engineer. At Hanford, he shared an office with Jim Holmes, a Vallejo, California, native and

wine enthusiast. The two of them hatched a plan to start a vineyard, and then put the idea into motion.

The incubator of wine science at the time was WSU's experimental station in Prosser, and its resident expert was Walter Clore, Washington's grandfather of wine. "We used to talk to Dr. Clore quite often, and we could call him up anytime we had a question," John remembers.

Even though the science seemed sound, people still thought they were crazy. Risking nearly everything, he planted nine acres of grapes in equal parts Cabernet, Chardonnay, and Riesling. His was the first vineyard on Red Mountain, now an officially recognized American Viticultural Area. From the very beginning, he envisioned it being a family operation, with his son poised to take over one day.

"I was a junior in high school when we planted that first block of grapes," Scott says. He remembers working after school in the vineyard, rolling wire, and planting on weekends. "I'm probably the only guy still alive out here who remembers pulling sagebrush with a chain and tractor, and not a bulldozer."

After graduating from WSU in agricultural engineering, Scott returned to Red Mountain in the early 1980s. Even then, success wasn't guaranteed, and money was tight. "One paycheck went to planting grapes," he recalls. "The other went to putting food on the table."

In the end, hard work, education, and resolve have paid off. Considered one of Washington's finest and more prolific wine producers, Kiona is also renowned as a grape grower for about 60 other wineries in the Northwest.

That success has garnered broad recognition. John is a Legend of Washington Wine Hall of Fame inductee, and Scott was named 2019 Honorary Grower of the Year by Auction of Washington Wines.

With Tyler's recent graduation, the Kiona torch has officially been passed down. "We're solidly into the third generation," Scott says.

And who knows? Maybe they'll be around as long as the Italian family. "It's kind of fun to think about." *

Alumni Association News

Cougar Marching Band:

Best in the West...East, North, and South

The Cougar Marching Band (CMB) does so much for so many, the WSU Alumni Association wanted to do something for them. The CMB is filled to the brim with **Cougar Spirit**. This group of dedicated Cougs provides inspiration and entertainment wherever they go. Through CMB's collaboration with the WSU Alumni Association, the Marching Band contributes to the Cougar experience year after year.

The Cougar Marching Band occupies a special place in the hearts of Cougs everywhere and adds to the spirit of any WSU rally or event. In recognition of that and all that the Marching Band does for the WSUAA, the Alumni Association wanted to say "thank you." For Giving Day, the WSUAA announced its plan to match all donations to the band up to \$10,000. To date, the challenge is nearly halfway complete. To reach the goal, the WSUAA is asking Cougs who love the Marching Band to donate. To contribute to the Marching Band, visit marchingband.wsu.edu.

As Cougs, many of our first memories of the Marching Band are from the student perspective. Watching performances during football season.

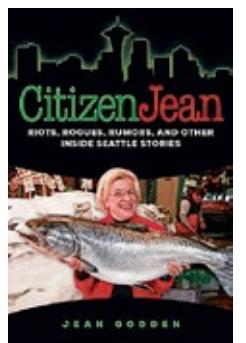
Singing the Fight Song together while we cheer the Cougs to victory. When students become alumni, the band's relationship with the WSUAA keeps traditions like those alive. The WSUAA puts on hundreds of events each year. The Marching Band can't perform at all of them, but it is able to perform at the big ones. From playing at Golden and Diamond Grad Reunions, to surprising Feast of the Arts dinner series guests as they enjoy the best food and wine WSU has to offer, to wowing Coug fans at the Alamo Bowl PreGame event, the Marching Band is dedicated to entertaining Cougs and inspiring **Cougar Spirit**.

That's really what the Marching Band is all about. And right now, it needs our help. As Brianne Davison, wildlife ecology and conservation sciences major and Marching Band member, says, "We struggle to get what's necessary to perform. We need to replace many of the older instruments and fund the new addition of the Color Guard (whose student members currently pay their own uniform expenses)."

Please join the WSU Alumni Association in supporting the **Cougar Marching Band**.



COURTESY WSU SCHOOL OF MUSIC



Citizen Jean: Riots, Rogues, Rumors, and Other Inside Seattle Stories

JEAN GODDEN

WSU PRESS: 2019

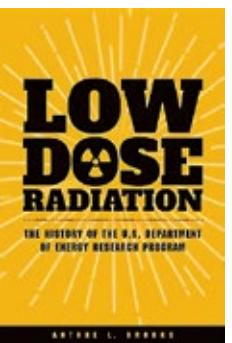
Newspaper columnist, city councilmember, and author Jean Godden outlines the history of Seattle in this captivating read, drawn from her many years living and working in the city.

The story begins with Godden recalling monumental events such as the World's Fair, the boycott of a new freeway, newspaper strikes, and the rescue of Pike Place Market. Toward the end of the book, we learn that Christine Gregoire, as the new governor in the mid-2000s, does everything in her power to get the city of Seattle back on track, according to Godden.

The book ends with Godden's observations on the immense difficulties that women face when running for office, due to gender bias and stereotypes.

Beautifully and intelligently written, Godden's book is intended for a broad audience—anyone who is interested in the history of Seattle—and even Seattle natives may not be aware of all the scandalous events that she recounts. While it is fascinating to read about events which have taken place in one's own city, this book could also benefit people who have very limited knowledge of Seattle. The city has been home to countless noteworthy historical events which affected people all over the country—and still do. Godden has gifted us with an intriguing and informational compilation of Seattle's historical happenings, pivotal events, and inside stories.

—Ashley Cole '19



Low Dose Radiation: The History of the U.S. Department of Energy Research Programs

ANTONE L. BROOKS

WSU PRESS: 2018

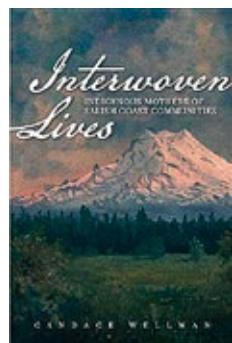
Many questions about the real impacts of low amounts of radiation on human bodies drove the research of biologist Antone Brooks and his colleagues at the U.S. Department of Energy in the last decade. Using microbeams to analyze cellular response and other advanced technologies, Brooks, professor emeritus at Washington State University Tri-Cities, and other scientists made some startling discoveries.

At low doses, biological reactions to radiation are unique and often unrelated to those that occur at high doses. The standard model was flawed when applied to lower exposures and, in fact, small doses of radiation can have an adaptive protective effect, according to Brooks.

Brooks grew up close enough to Nevada Test Site nuclear detonations to see the sky light up, feel the shockwaves, and be exposed to radioactive fallout. In his scientific career, including his role as chief scientist for DOE low dose radiation research, Brooks questioned the impact of fallout exposures. How dangerous were they? How afraid of low dose radiation should people be?

The answers in his book show how knowledge might be useful in a nuclear event, describe the current thinking, and provide a scientific basis for setting radiation standards.

—Larry Clark



Interwoven Lives: Indigenous Mothers of Salish Coast Communities

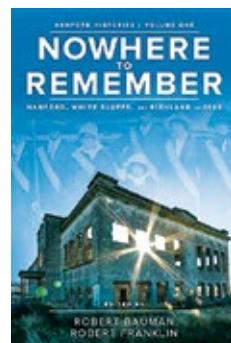
CANDACE WELLMAN '68 SOCIO.

WSU PRESS: 2018

This enlightening and detailed recounting of the lives of indigenous women in Salish Coast communities, specifically around Bellingham Bay, explores cross-cultural marriages throughout this region during the mid-1800s. The exciting and taxing lives of Lummi member Jenny Wynn, Snoqualmie member Elizabeth Patterson, Nlaka'pamux member Mary Allen, and the Haida wife of Fort Bellingham commander George W. Pickett—who later became a Confederate brigadier general—provide insight into how they held together marriages and families, significantly impacted communities, and mediated between Native people and settlers.

The stories are not as cheerful as some historians might like to claim, but they are captivating. This book sheds light not only on several monumental events, but more importantly on small events that formed these Salish Coast communities. The strong women in this book were responsible for an increased pool of teachers, the growth of Whatcom County, and the development of southeast Alaska. Mrs. Pickett (her first name lost to time) was the mother of an influential artist. This book is definitely worth a read to learn more about the influence of these women that persists to the present.

—Ashley Cole '19



Nowhere to Remember: Hanford, White Bluffs, and Richland to 1943

ROBERT BAUMAN AND ROBERT FRANKLIN ('14 MA HISTORY)

WSU PRESS: 2018

A husband-and-wife team of surveyors lodged with Leatris Reed's family in White Bluffs before removal orders were given in 1943. "They didn't even know what they were surveying for," she recalls, only that "they were hired by the United States government" and "we thought it was an irrigation project."

Her family had come to White Bluffs from North Dakota during the Great Depression because "there was fruit there"—fruit and food and a "reasonable" temperature. They came looking for a better life, and they found it—even though it was short-lived.

"Fruit farmers had to leave their crops on their trees. And that was very hard on them, no money, no future," recalls Catherine Finley, another resident whose roots in White Bluffs trace back to 1898 when her father, Archie Borden, was born there.

Their stories are two of many that make up the backbone of this 196-page first volume in the Hanford Histories series. It details daily life in Hanford, White Bluffs, and Richland before the government forced out the towns' residents. Many owned farms or businesses that had taken decades to build, and were given only about a month to vacate their homes for a new military wartime effort.

The top-secret Manhattan Project was established in 1943, and the area has largely been off-limits to the general public ever since. The WSU Tri-Cities' Hanford History Project, founded in 2014, has collected more than

170 interviews from former residents, those who were children growing up in the Priest Rapids Valley during the 1930s and 1940s. Three such interviews, including Reed's, are transcribed in full in the back of the book, which details all three communities going back to the late 1800s.

Because of its remoteness, the Priest Rapids Valley was one of the last regions of Washington state settled by pioneers. The 1902 Newlands Reclamation Act and arrival of irrigation led to population increases. By 1943, there were approximately 2,300 inhabitants in the area. Reed and Finley both recall the communities as close-knit and friendly. They were also hard-working communities, where families—including children—would rise in the wee hours of the morning to cut asparagus and bring the cows home to milk them before returning them to the pasture—and heading off to school.

When they were forced to vacate, some moved to Yakima and Sunnyside. Others ended up in Kennewick, Goldendale, Pendleton, and beyond. Finley's family moved to Benton City. Reed's went to Walla Walla.

Chapter three, written by Laura Arata ('14 PhD History), offers the distinct perspective of women in the valley. David Harvey, who's spent more than 35 years in historical preservation, wrote the first chapter, an overview of the area and its early years. Michael Mays, a professor of English at WSU Tri-Cities and the director of the Hanford History Project, is the series editor. Robert Franklin, assistant director, and Robert Bauman, associate professor of history at WSU Tri-Cities, edited the volume.

—Adriana Janovich

BRIEFLY NOTED

Emily's Tears

IAN MINIELLY '97 PSYCH. 2019

Twenty-five years after she's adopted by her aunt and uncle, Emily learns of the death of her former foster father, who cared for her for two years when she was very young. She discovers more about the circumstances of her adoption in this slim novel, and then decides whether to attend the funeral and pursue a relationship with her former foster mother. Author and Southern Baptist pastor Ian Minielly and his wife,

Stephanie, live on Michigan's Upper Peninsula; their personal experience as foster parents led him to write the book.

Wheat Country Railroad: The Northern Pacific's Spokane & Palouse and Competitors

PHILIP F. BEACH

WSU PRESS: 2018

Drawing heavily from early newspaper accounts and railroad documents and correspondence, this encyclopedic reference work describes in great detail the intense rivalry between Oregon Railway & Navigation Co., Union Pacific, and Northern Pacific in Eastern Washington from 1860 to 1910. The 368-page hardbound volume features 35 pages of notes and citations as well as more than 50 illustrations, including many images from Palouse regional historical societies.

Contemporary Irish Writing and Environmentalism: The Wearing of the Deep Greens

DONNA L. POTTS

PALGRAVE MACMILLAN: 2018

Potts, an English professor at WSU, explores how contemporary Irish writers, musicians, and artists have addressed as well as been influenced by the country's environmental movement, which began gaining traction in the 1970s. Dogs & Autism

Dogs & Autism: Examples and Procedures for Northwest Coast Archaeologists

KATHRYN BERNICK, ED.

WSU PRESS: 2019

Sixteen experienced archaeologists, including WSU adjunct professor Dale Croes ('73 MA, '77 PhD Anthro.), provide guidance on how to locate wet archaeological sites, outline procedures for recovering and caring for waterlogged artifacts, and share highlights of research findings.

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BOLD, YES. COUGS ACHIEVE.*



ALUMNI
ASSOCIATION

*Well, Cougs overachieve, but you get what we're saying.

CLASSnotes

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The Marrowstone Island Community Association named **VIGO ANDERSON** ('67 Bus.) the Marrowstone Island Citizen of the Year for 2018. Anderson has lived on the six-square-mile island with his wife Paula since 2007. After graduating, he served two years with the Marines in Vietnam, then worked for Caterpillar in Alaska. ⚡ Former Canadian Football League record-breaking kicker for the BC Lions **TED GERELA** (x'67 Ed.) was inducted into the Powell River Sports Hall of Fame in British Columbia.

The Auction of Washington Wines announced **SCOTT WILLIAMS** ('80 Ag. Eng.) of Kiona Vineyards as its 2019 honorary grower. Williams and his wife, Vicki, moved to Red Mountain in 1984 to help his parents in one of the area's first vineyards. ⚡ **CARL JAMESON** ('83 Comm.) coauthored *The Illustrated Field Guide to Vintage Trailers*, a one-stop identification reference with hundreds of photos and detailed illustrations of trailers. He's also a producer and director at Craftmaster Productions, a full-service video production company in Portland, Oregon. ⚡ **ERIN NUXOLL** ('83 Forest & Range Mgmt.) has been promoted to senior vice president of human resources at Boise Cascade Company. She worked at the company for 23 years, took another position for 10 years, and rejoined Boise Cascade in 2016. ⚡ WSU Extension Pacific County director **KIM PATTEN** ('84 PhD Hort.) retired from WSU in April, after 30 years helping cranberry farmers and oyster harvesters at the Long Beach Research and Extension Unit. Patten also received the William P. Stephen Lifetime Achievement Award at the Pacific Northwest Pollinator Summit & Conference in February. ⚡ Avista President **DENNIS VERMILLION** ('85 Elec. Eng.) was elected CEO by the energy company's board of directors. Vermillion joined Avista in 1985 and has held a number of staff and management positions. He also serves as a board member for Western Energy Institute, American Gas Association, and for the Avista Foundation. ⚡ The Auction of Washington Wines named industry veteran **JAMIE PEHA** ('86 Hotel & Rest. Admin.) its interim executive director. Peha's career highlights include building Taste Washington into a nationally recognized event, serving as interim director for both Woodinville Wine Country and the Walla Walla Valley Wine Alliance, and heading up the Auction's "Private Barrel Auction," which raised money for projects such as WSU's wine science research. ⚡ Bioagriculture company NewLeaf Symbiotics added **MARK WARNER** ('86 Chem. Eng.) to the organization's scientific advisory

board. Warner has extensive experience in sustainable agricultural solutions. ⚡

BRAD RAWLINS ('87 Comm., Spanish) became the interim director of the School of Media and Journalism at Arkansas State University. Rawlins has served in several administrative roles for Arkansas State, as

president of the Association of Schools in Journalism and Mass Communication, and as a committee member of the Accrediting Council for Schools of Journalism and Mass Communication. He is also on several editorial boards of journalism and communication scholarly journals.

⚡ Pacific Lutheran University's Board of Regents has appointed **ALLAN BELTON** ('88 Busi.) as PLU's fourteenth president.

Belton has served in the role as interim president for the past two years. He first moved to PLU four years ago as senior vice president and chief administrative officer. Prior to joining PLU, Belton enjoyed a 25-year career with Bank of America Merrill Lynch, where he served most recently as managing director in global treasury management for higher education, government, and nonprofit organizations. ⚡ **TOM SCHWILKE** ('88 Busi.) has been named president of the Dallas division of retail and supermarket company Kroger. He previously worked in management for Safeway. ⚡ **SAMMIE JO THIRTYACRE** ('88 English), a U.S. Air Force veteran and education advocate, was selected to serve on the Eatonville School District Board of Directors. ⚡

DON CARRELL ('89 Ag. Econ.) has been named chief executive officer of Kwik Lok Corp. in Yakima. Carrell joined Kwik Lok in 2017 as chief operating officer. Before that, he was general manager at Rainier Plastics, Inc., vice president at Shields Bag and Printing Co., and senior logistics manager at Kaiser Aluminum Trentwood Works.

⚡ NBA team Memphis Grizzlies have hired **RICH CHO** ('89 Mech. Eng.) as its new vice president of basketball strategy. Cho is the former general manager of the Charlotte Hornets and the Portland Trail Blazers. He was the first Asian American general manager in NBA history. ⚡ Weber Shandwick, a global communications and marketing solutions firm, announced

CLASSnotes

Cougar VI is Here

In true Cougar Spirit, the latest release of the Cougar Collectors' Series is a little extra special. We are happy to announce the very first single varietal for this program with a hand-crafted Cabernet Sauvignon from the Cougs at Canoe Ridge Winery! You won't want to miss it. Guarantee your bottle by joining Wine-By-Cougars, the official wine club for Cougs, before August 13. Learn more at winebycougars.com.

And, get your first taste of Cougar VI at the Release Party this summer:

August 17, 1:00–4:00 p.m.
Canoe Ridge Vineyards, Barrel Room
1102 W. Cherry Street
Walla Walla, WA 99362

alumni.wsu.edu/cougarvireleaseparty



Wine-By-Cougars

THE WINE CLUB FOR COUGS



WILL LUDLAM ('89 Poli. Sci.) as president of Weber Shandwick West, with offices in Los Angeles, San Francisco, Silicon Valley, and Seattle. Ludlam joins from the public relations firm Edelman, where he led the Pacific Northwest business unit. ✎ Child psychologist **TODD SOSNA** ('89 MS, '91 PhD Psych.) is the chief program officer of Children's Institute in Los Angeles, which offers trauma-informed early education, as well as behavioral health and family strengthening services. He oversees a budget upward of \$70 million and a staff of 800.

SHAWN WOODWARD ('91 Elem. Ed.), who has led the Lake Pend Oreille School District in Sandpoint, Idaho, for the past seven years, has been named superintendent of the Mead School District in Spokane. ✎ CourseCo, the management company for WSU Pullman's Palouse Ridge Golf Course, received the President's Award for Environmental Stewardship, given by the Golf Course Superintendents Association of America. Palouse Ridge is run by **TODD LUPKES** ('92 Agro.). ✎ Bridge Bank opened a new office in Seattle with technology banking veteran **TOM REIMER** ('92 Fin.) as senior vice president. He has over 20 years of experience working with venture capitalists, attorneys, and CPAs. ✎ **KIM RIGGS** ('92 Busi.) joined the business development team at Orion First, a small business commercial finance firm in Gig Harbor. Riggs has been active in the industry for over a decade. ✎ **RON BANNER** ('93 Phys. Ed., '95 Ed.) was selected as superintendent of Clover Park School District in Lakewood. Banner has 24 years of experience in public education and started at Clover Park schools in 2003. ✎ Meketa Investment Group in Boston expanded its employee ownership, including **DAVID SANCEWICH** ('96 Busi., '00 MBA). He is a consultant to public funds and Taft-Hartley clients. ✎ **RICK GORE** ('98 PhD Busi.) received the Roger Peters Distinguished Professor Award at Fort Lewis College in Durango, Colorado, for the 2018-19 academic year. The award honors career excellence in teaching, scholarship, and service.

After 11 years as the dean of Washington State University's College of Veterinary Medicine, including the college's greatest period of physical growth and expansion, **BRYAN SLINKER** is stepping down. He plans to teach part-time before fully retiring in summer 2020.

Slinker ('80 DVM, '82 PhD Vet. Sci.) returned to WSU in 1992 as an associate professor in the Department of Integrative Physiology and Neuroscience, which he chaired from 1999 until he became dean in 2008. During his tenure, he oversaw the move of the School for Molecular Biosciences to the veterinary college, the growth of the Paul G. Allen School for Global Animal Health, and an increase in students at all levels. In the two most recent legislative sessions, he helped secure a total of \$59.4 million to move the Washington Animal Disease Diagnostic Laboratory to a state-of-the-art facility.

"We're a very different college now than we were when I became dean," he says. "We're much bigger and, I would say, much better." Growing, of course, "has its own challenges in keeping a sense of community among faculty, staff, and students," says Slinker, noting



COURTESY WSU COLLEGE OF VETERINARY MEDICINE

he considers himself "an enabler. I find money for ideas. Many weren't my ideas. But I think that's the dean's job: using time and effort to set up others for success. Whatever we've accomplished in our growth and improved quality of programs has definitely been a team sport."

WSU is now ranked first among U.S. veterinary colleges in attracting USDA funding and third for overall federal research funding. Slinker's own research focused on heart and cardiac muscle function and adaptation. Over the years, he's taught applied biomedical statistics, bioethics (including

animal rights and welfare), responsible conduct of research, physiology, pharmacology, and developmental anatomy. He's served on the board of directors of Seattle's Woodland Park Zoo as well as the WSU Research Foundation. In retirement, he plans to continue to live in Pullman and make more time for travel and fishing. It's been, he says, "a privilege to be dean of my alma mater."

BY ADRIANA JANOVICH

TODD PISARCZYK ('98 Busi.) has been named the new head coach of King's Way Christian School baseball program in Vancouver. He was previously on the school's board and also is owner and founder of Sustainable Wealth Management. ✎ Margaritaville Hollywood Beach Resort hired **JOHANN RUNARSSON** ('98 Hotel & Rest. Admin.) as director of food and beverage. ✎ The Northern Wyoming Community College District selected **WALTER TRIBLEY** ('98 PhD Biochem.) as its new president. Tribley had been serving as the superintendent and president of the Monterey Peninsula Community College District in California since December 2012. He previously worked at Seminole Community College in Florida, the University of Florida, and Wenatchee Valley College.

Skanska USA has promoted **TREVOR WYCKOFF** ('00 Const. Mgmt.) to vice president and project executive. Since joining Skanska 20 years ago, he has focused his career on delivering health-

care and educational projects throughout Oregon and southwest Washington. He's now leading teams building the Elks Children's Eye Clinic at OHSU's Casey Eye Institute as well as the new Sherwood High School. He was named Project Manager of the Year by the *Daily Journal of Commerce* in 2019. ✎ **CARRIE PARKER** ('01 Soc. Sci.) has been named senior vice president of client services at the Elderman contact center. She has more than 18 years of senior housing leadership experience, including Prestige Care's vice president of sales and marketing, regional vice president of operations at Atria Senior Living, and senior regional director of operations at Assisted Living Concepts. ✎ **JEFF KRAAYEVELD** ('02 Kinesio.), athletic trainer at Skyview High School in Vancouver, was nominated for the Newell Award and National Athletic Trainer of the Year. ✎ Concerto HealthAI, a data and artificial intelligence company focused on oncology and other key therapeutic areas, hired **VIVEK VAIDYA** ('02 Comp. Sci.) as senior principal scientist. In 2018,

Silicon India magazine named him one of India's top 10 data scientists. Previously, he worked at GE Global Research where he led teams in building a deep learning accelerator platform, recently released as Edison AI. He has filed 20 patents on a variety of technologies. ✎ Clark College in Vancouver has hired **KELLY LOVE** ('03 Hum.) as chief communications officer. Love previously worked as a public relations specialist at Legacy Salmon Creek Medical Center and Legacy Cancer Institute, CEO of the Greater Vancouver Chamber of Commerce, and as U.S. Representative Brian Baird's district director from 2005 to 2010. She began her career as a broadcast news reporter at KGW TV in Portland. ✎ **BRAD PORTER** ('03 Hosp. Busi. Mgmt.) has been promoted to senior sales executive with Healthcare Management Administrators. He is also a producer licensee with the Washington State Insurance Commission, a certified self-funding specialist, and a member of the Employee Benefits Planning Association and Washington Association of Health

CLASSnotes

Underwriters. He plans to complete an MBA in healthcare later this year. **TARYN PERRY** ('04 Comm.) has joined ALLWEST Testing & Engineering in Lewiston, Idaho, as the vice president of business operations. She had worked at Trindera Engineering for 13 years. **People's Bank** has hired **ALDI KLLOGJERI** ('05 Busi.) as vice president and commercial banking officer at the Skagit/Island Commercial Banking Group based at the Burlington office. **TVA Architects** in Portland, Oregon, has promoted **JOHN JAMIEL** ('06 Arch.) to senior associate. Jamiel is working on the Portland Diamond Project MLB stadium, a condo tower in Vancouver, a high-end office building in Eugene, and an office addition to the University of Oregon's Matthew Knight Arena. **ANDREW MILLER III** ('06 Psych.) has been promoted to director of financial planning and analysis for Abbott Laboratories in Minneapolis, Minnesota. **The ONE Group Hospitality, Inc.**, a global restaurant and hospitality

company, appointed **TYLER LOY** ('07 Fin.) as chief financial officer. Loy has served as vice president of strategy at The ONE Group since September 2018. Prior, he was the vice president of finance for Pacific Bells, a large Taco Bell and Buffalo Wild Wings franchisee. **Kimpton Canary Hotel** appointed **BEN THIELE** ('08 Soc. Sci.) as general manager of its luxury downtown hotel in Santa Barbara, California. In the role, Thiele will lead day-to-day operations, guest relations, and business development for the property. He has worked for Kimpton Canary for 15 years, starting as a valet at the Hotel Monaco in Seattle during summers in college. **Washington State Department of Transportation** selected two artists, including **MARY WELCOME** ('08 MFA) to serve in the country's first statewide agency artist-in-residence program. The residency, based in Olympia, will run for one year with both artists working on improving community engagement, supporting

alternatives to single occupancy vehicle transport, creating healthier communities, and enhancing safety and equity. **The Providence St. Mary Foundation** in Walla Walla has appointed **LINDSEY OLDRIDGE** ('09 Busi.) as its chief philanthropy officer. She has been with Providence for 10 years, organizing events such as the Providence St. Mary Birth Center campaign.

MICHAELA MILLER ('10 Comm.) joined Berkshire Hathaway HomeServices Northwest Realty in Burien. After four years in mortgage servicing, she's excited to experience the real estate market as a licensed realtor. Miller also received her master of arts from Gonzaga University in 2013. **ASHLEY MAHAN** ('11 Busi.) will leave her position as chief operating officer of the Walla Walla Valley Wine Alliance when a new executive director is named. She has served as the alliance's top administrator since 2017. Previously, Mahan worked as a Tillamook Cheese brand ambassador as well as advertising coordinator for the Tillamook County Creamery Association. **JINGZE JIANG** ('13 PhD Econ.), associate professor of economics at Edinboro University in Pennsylvania, was selected to cochair the Federal Reserve Bank of Cleveland's 2019 undergraduate research competition.

Oswego Health welcomed family nurse practitioner **TYANNA BERGERON** ('15 Nursing) to its PrimeCare Fulton office. Before joining Oswego Health, she was a registered nurse in a variety of settings, including a pediatrics practice and a hospital emergency room. **THOMAS SPOTTECK** ('15 Vit. & Enol.) became head winemaker at the Lenz Winery in Peconic, New York. After serving two tours in the U.S. Marine Corps and studying at WSU, Spotteck worked at wineries in the Columbia Valley and under pioneering American vintner Zelma Long in the Stellenbosch region of South Africa before moving to Long Island. **The Saskatchewan Roughriders** of the Canadian Football League have signed running back **JAMAL MORROW** ('17 Sport Mgmt.). He ranks third in WSU history with 4,219 all-purpose yards.

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DEAN GARY M. POLLACK, PhD

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To show appreciation to Dean Pollack, alumni, faculty and staff have established the Gary M. Pollack Endowed Scholarship in Pharmacy and Pharmaceutical Sciences. To contribute to this effort, visit go.wsu.edu/pollack-scholarship or call 509-368-6675.

INmemoriam

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MAXINE COX ('40 Phys. Ed.), 100, July 8, 2018, Pomeroy. **CHESTER M. PLOTNER** ('40 Forest & Range Mgmt.), 97, October 9, 2016, Vancouver. **GEORGE E. ROWSWELL** ('40 Phys. Ed.), 101, December 17, 2018, Tumwater. **LAWRENCE L. BROWN** ('41 Ani. Sci., Alpha Gamma Rho), 100, February 28, 2019, Spokane. **PAUL BEATTY CREWS** ('42 Mech. Eng.), 99, July 20, 2017, Anchorage, Alaska. **JERRY DAVID CLARKE** ('42, '47 MS Ani. Sci., Tau Kappa Epsilon), 101, April 10, 2019, Yakima. **HAROLD "OLIE" OLSEN** ('42 Poli. Sci.), 98, April 12, 2019, Seattle. **JANE H. SUTHERLAND** ('44 Busi.), 96, May 25, 2018, Las Vegas, Nevada. **C. JAYNE WATSON** ('44 Food Sci., Pi Beta Phi), 95, June 28, 2019, Mansfield, Massachusetts. **MILDRED ADELE BELL** ('46 Home Econ.), 94, February 25, 2019, Helena, Montana. **ALBERTA "BETTY" KUHL DRAKE** ('46 Bacterio.), 94, September 19,

2018, Baker City, Oregon. **LEE HALE** ('47 Music), 96, May 10, 2019, Beverly Hills, California. **VIRGINIA LAGERS** ('47 Home Econ.), 92, February 14, 2019, Sun City West, Arizona. **HERBERT G. ARM** ('48 Bacterio.), 92, February 23, 2019, Quincy Village, Pennsylvania. **RUTH LOUISE JOHNSON** ('48 Pharm.), 92, April 10, 2019, Portland, Oregon. **DALE LEO MARTIN** ('48, '50 MS Physics), 94, December 24, 2018, Bellevue. **JEAN ELAINE THORNTON** ('48 Home Econ.), 93, January 11, 2019, Edmonds. **HAZEL M. BLAKESLEE** ('49 Home Econ., '50 Ed.), 91, March 9, 2019, Roseville, Minnesota.

RUSSELL DEAN LEONARD SR. ('50 Pharm.), 90, April 16, 2019, Yakima. **H. BRUCE PARKER** ('50 Ed.), 95, March 18, 2019, Seattle. **LYNN J. GEARHEART** ('51 Ag.), 92, April 13, 2019, Kennewick. **JAY W. GIESA** ('51 Comm.), 89, May 18, 2018, Issaquah. **AVERILL ENID KELLER** ('51 Home Econ.), 88, November 9, 2018,

Fishtail, Montana. **ROBERT YEE LEE** ('51 Pharm.), 86, June 13, 2016, Albuquerque, New Mexico. **LAFAYETTE FREDERICK** ('52 PhD Plant Path.), 95, December 29, 2018, Tuskegee, Alabama. **EFFIE L. (GALBRAITH) JACOBSON** ('52 Socio.), 88, March 14, 2019, Issaquah. **WALTER PHILIP KRAUSE** ('52 Forest & Range Mgmt.), 91, May 1, 2017, Sacramento, California. **WILLIAM A. KUHLMAN** ('52 Hort.), 93, March 15, 2019, Spokane. **JOANN HATCH MOESER** ('x'52), 88, March 1, 2019, Bellevue. **RAYMOND LOREN BEALE** ('53 Ag. Mech.), 88, November 1, 2018, Pomeroy. **JEANNINE HOYT BENDIX** ('53 Ed.), Kappa Alpha Theta), 86, August 5, 2017, Portland, Oregon. **ROBERT LYNN "POPPY" CAMPBELL** ('53 Gen. St.), Lambda Chi Alpha), 88, March 14, 2019, Spokane. **JAMES KAY CONNOLLY** ('53, '60 MA Poli. Sci.), 89, May 8, 2018, Tucson, Arizona. **CARROL SCOTT MILNE** ('53 Gen. St.), 85, December 30, 2016, Los

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CLASSnotes cont'd

ANDRE DILLARD ('18 Soc. Sci.), outstanding offensive lineman at WSU, was selected in the first round of the NFL draft by the Philadelphia Eagles. He was the twenty-second pick overall. **Sean Dotson** ('18 EdD), the former associate superintendent of Cheney Public Schools, as its new superintendent. **MIRIAM FERNANDEZ** ('18 PhD English), assistant professor of English at California State San Bernardino, received the 2019 Conference on College Composition and Communication James Berlin Memorial Outstanding Dissertation Award for her dissertation "Tropes of the Nation: Tracing the Colonial Origins of the Matriarchal Figures of Mexican Nationalism." Fernandez teaches composition and rhetoric at CSUSB. **DEVAYN HENNING** ('18 Civ. Eng.) joined PBS Engineering and Environmental as a civil engineer in its Issaquah office.

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Angeles, California. **JOAN REILLY** ('53 Nursing), 88, May 11, 2019, Wenatchee. **SHIRLEY A. BIRCHFIELD** ('54 Nursing), 87, January 27, 2019, Seattle. **WILLIAM G. FRIBERG** ('54 Phys. Ed., Phi Kappa Tau), 88, March 14, 2019, Puyallup. **PHILIP LANE HAYDEN** ('54 Crim. Jus.), 89, March 3, 2015, Edmonds. **JACK WAYNE LARSEN** ('54 Elec. Eng.), 88, April 6, 2019, Orange, California. **JOYCE LYNN STUBBS** ('55 Busi.), 84, April 10, 2019, Spokane. **NOLA ANITA TORGESEN** ('55 Busi.), 85, January 24, 2019, Huntington Beach, California. **MARGIE MAUREEN BROX** ('56 Phys. Ed.), 85, April 25, 2019, Beaverton, Oregon. **SHIRLEY ANN BASSETT FRANK** ('56 Home Econ.), 84, March 25, 2019, Edmonds. **VAUGHAN D. HITCHCOCK** ('56 Phys. Ed.), 84, October 1, 2018, San Luis Obispo, California. **ROBERT DALE LABOUNTY** ('56 Vet. Sci., '62 DVM), 84, November 9, 2018, Shadow Hills, California. **PAUL STOFFEL III** ('56 Civ.

Eng., Alpha Tau Omega), 85, March 9, 2019, Dallas, Texas. **DANIEL S. BRIGGS** ('57 Busi., Theta Chi), 87, March 1, 2017, Lynnwood. **PHILIP D. CLEVELAND** ('57 Zool., '59 MS Food Sci.), 84, March 30, 2019, Mead. **HAROLD LOUIS FOWLER** ('57 Comm.), 96, April 15, 2019, Tacoma. **JESS VERNON SEXSON** ('57 Busi.), 84, March 23, 2019, Spokane. **DONALD SING WONG** ('57 Police Sci.), 87, November 13, 2018, Honolulu, Hawaii. **ARLENE V. BEALE** ('58 Gen. St.), 80, February 22, 2017, Pomeroy. **DOUGLAS ESLEY HIPP** ('58 Phil.), 83, March 21, 2019, Whitehouse, Texas. **RICHARD C. HULSEMAN** ('58 Civ. Eng.), 89, March 24, 2019, Richland. **RICHARD R. KELLER** ('58 Hotel & Rest. Admin.), 87, February 11, 2019, Everett. **G. PAUL KILLIAN** ('58 Ed., '66 EdD), 84, November 27, 2018, Reno, Nevada. **JIM D. MANRING** ('58 Hort.), 82, May 20, 2018, Pomeroy. **ROBERT P. MOEHRING** ('58 Elec. Eng.), 84, November 5, 2018,

Ridge, New York. **MILDRED B. PRICE** ('58 Nursing), 82, February 26, 2019, Trinity, North Carolina. **WILLIAM D. PRICHARD** ('59 DVM), 89, April 4, 2019, Salem, Oregon. **DONALD TRUNKY** ('59 Zool.), 81, May 1, 2019, Post Falls, Idaho.

ILENE ELAINE FREEMAN ('60 Home Econ.), 80, April 24, 2019, Richland. **GEORGE W. HOLBROOK** ('60 Busi.), 83, August 17, 2017, Salem, Oregon. **MICHAEL MAX MANRING** ('60 Gen. St.), 80, April 22, 2017, Allyn. **JOHN EDWARD KUMPULA** ('61 Ag. Ed.), 78, February 26, 2017, Port Angeles. **A. DALE WUNDERLICH** ('61 Police Sci.), 82, April 25, 2019, Ocala, Florida. **WALTER MYRON YEAGER** ('61 MA History), 88, February 18, 2019, Edmonds. **JACK BARTON DUFF** ('62, '66 MS Ag.), 75, October 2017, Puerto Princesa City, Philippines. **CARTER M. FRENCH** ('62 Gen. St., '75 MED), 81, May 9, 2019, Everett. **RALPH W. BOESE** ('63 MAT Ed.), 96, April 24, 2018, Spokane. **JOHN WESLEY PERRY** ('63 Busi., '65 MBA), 77, November 11, 2018, Colfax. **CHESTER "CHET" S. PEDERSEN** ('64 Agro.), 76, December 1, 2018, Quincy. **ZAFAR UDDIN** ('64 Forest & Range Mgmt.), January 20, 2019, Rawalpindi, Pakistan. **GEORGE ANTHONY BUONOCORE** ('65 MA Gen. St.), 91, February 18, 2019, Moraga, California. **LARRY RAY GUNNOE** ('65 Elec. Eng.), 83, April 6, 2019, Eagle, Idaho. **MARGARET "MICKEY" E. STROOPS MARSHALL** ('65 Spanish), 75, April 25, 2019, Sebastopol, California. **STEPHEN PAUL ZAGELOW** ('65 Poli. Sci.), 76, January 22, 2019, Olympia. **CAROLYNNE MARIE CHASE** ('66 Soc. St.), 70, February 23, 2014, Los Altos, California. **RODNEY D. DAVIDSON** ('66 Gen. St.), 75, March 1, 2019, Longview. **CLIFFORD W. HOLMAN** ('66 Civ. Eng.), 74, December 10, 2018, Pullman. **JOHN JAMES "KICKER" CURTIS** ('67 DVM), 76, March 21, 2019, Malta, Montana. **BILL HENRY ELTZ II** ('67 Poli. Sci.), 73, April 30, 2019, Eugene, Oregon. **CINDA RAE NEWBY** ('67 Kinesio.), 73,

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Monumental task

Rudy Autio ('52) and **Harold Balazs** ('51) were monumental artists in their respective orbits, which coalesced in the early 1950s while both attended graduate school at Washington State University. Autio's fame extended well beyond his Montana home, buoyed by his involvement with the internationally-acclaimed Archie Bray Foundation for the Ceramic Arts in Helena, Montana. Balazs's work, in contrast, was prolific, varied, yet regional: seven decades of paintings, jewelry, drawings, enamels, and more, including sculpture in public and private spaces throughout Washington, Idaho, Alaska, California, Oregon, and Montana.

"Each exerted enormous influence in their fields, but more potently, throughout their lives they supported and nurtured the young artists who came up behind them," says Ben Mitchell, an independent curator, arts writer, and editor familiar with both artists. While curator at Spokane's Northwest Museum of Arts and Culture (MAC), for example, Mitchell assembled its 2010 Balazs solo show, featuring more than 125 sculptures, drawings, and other pieces—including the artist's workbench.

When each man died—Autio in 2007, Balazs in 2017—he left a considerable void in the art world, and a larger question, too: what to do with the collection?

"There is an exquisite challenge and responsibility tending an artist's collection, their own works left behind, and those works of others—friends, colleagues, students—they collected throughout their lives," says Mitchell.

For the Balazs family, the answer to "What to do with the artwork?" was simplified by the success of the artist's last exhibition

in 2017. Like others prior—he'd exhibited at Coeur d'Alene's Art Spirit Gallery since 1997—it virtually sold out.

"There's not that much [of Harold's artwork] to sell," says daughter Erika Balazs, one of Harold and wife Rosemary's three adult children.

"He was never about inventory," adds her sister, Andrea Balazs.

Indeed, the 89-year-old artist was oft-quoted as to why he sold stuff: to make more stuff.

Thus, to put together an August 2019 exhibition of the two men's work, titled *Northwest Monumentalists*, Art Spirit Gallery owner Blair Williams pulled from secondary Balazs markets or found people willing to loan items.

What the family has in abundance, however, are artifacts. Rarely one to stop working (except for hunting and fishing), Harold instead gave people money to bring back things from their travels and pieces by artists whom Harold admired, including Rudy. The collection covers nearly every inch of wall space in the family's Mead-area home, spilling onto the grounds and outbuildings.

"I counted once and there were over 100 [artworks] on the walls and 70 just sitting," says Erika.

The Autios' challenge is similar, albeit magnified. Daughter Lisa Autio figures she and brother, Chris Autio, have catalogued some 2,600 pieces. In addition to their father's drawings, early watercolors, and maquettes, it includes artworks by people the Autios knew, such as Peter Voulkos, Rudy's contemporary and cofounder of the Archie Bray.

Initially, the collection fell under the purview of Rudy's wife, Lela Autio, a respected artist, teacher, and arts advocate who helped found the Missoula Art Museum (MAM). She passed away in 2016, her last journal entry asking, "What am I going to do with this collection?"

Now Lisa is the point person amongst her three brothers. "I arrange shows, answer dad's website questions, set up family meetings about the collection (and the estate before it was settled)," she says.

Lisa was also unknowingly a catalyst for the upcoming joint-collection exhibit by attending the opening of what would be Harold's last Art Spirit show. She and Williams chatted about how the two families grew up similarly influenced by their fathers' shared profession. Williams, a Coeur d'Alene local who attended college and started a career in Montana before returning to Idaho, wondered how the gallery might highlight the culture of camaraderie that existed between artists like Rudy and Harold.

Williams eventually narrowed the focus and consulted with curator Mitchell and both families. The resulting exhibition offers another gift from the artists: an opportunity for frank discussions about artists, and their legacy—artwork, but also family.

"We have all gotten better at this," Lisa says of the past three years dealing with her parents' estate. "At the beginning, it seemed like a mountain. We didn't have space to grieve."

She says she is thankful her mother left funds to care for the collection, which is nonetheless still in flux. "I think museums are finding limits to transportation, insurance, and organization of a traveling show," she says.

So the family perseveres: two future exhibits booked in Montana, ongoing donations to institutions—books to the Archie Bray, for example—but still volumes of archival material to sort through, maintenance on the house, the need for good tracking software, and all the other tasks that must happen in order to preserve the Autio legacy.

The journey has been formidable, Lisa says. "But we've been mindful of doing the right thing for the folks, whatever the issue. They were good to us." *

COURTESY WSU DEPARTMENT OF FINE ARTS



INmemoriam

February 12, 2019, Spokane. **SCOTT T. TRAVERSO** ('67 Civ. Eng.), 75, March 18, 2019, Bellevue. **DENNIS G. SCHNEIDER** ('68 Math.), 70, December 23, 2016, Olympia. **WILLIAM D. ALBERTSON** ('69 MAT Biol.), 80, June 15, 2018, Sandpoint, Idaho. **JOYCE M. JETT-ALI** ('69, '73 MA Apparel Merch. & Textiles), 67, August 31, 2015, Geneva, Switzerland. **RICHARD H. WEATHERMON** ('69 Ed.), 91, February 22, 2019, Pullman.

EILEEN MARIE SEELY ('70 Acc.), 71, March 11, 2019, Spokane. **SCOTT WHITNEY ANDREWS** ('71 Chem. Eng.), 70, April 19, 2019, Seattle. **JULIA SILBERBERG COHEN** ('71 MA Music), 100, March 15, 2019, Pullman. **JAMES CLARKSON MOORE** ('71 DVM), 72, March 5, 2019, Kingston. **MARSHA ROSE HOPFINGER SORK** ('71 Ed.), 69, November 5, 2018, Vancouver. **MELVIN D. CAMPBELL** ('72 PhD Soils Sci.), 86, March 11, 2019, Richland. **CLEO COY CALLEN** ('73 Fin.), 68, March 22, 2019, Phoenix, Arizona. **DIANA BARDEN PRENGUBER** ('73 Psych.), 68, April 22, 2019, Issaquah. **ROBERT R. BROUGHTON** ('74 Police Sci.), 66, April 8, 2019, Monroe. **JOHN CHARLES COBB** ('74 Pharm.), 68, April 9, 2017, Coupeville. **SCOTT AARON ATTEBERY** ('75 Forest & Range Mgmt.), 66, July 6, 2018, Emmett, Idaho. **MICHAEL C. JOHNSON** ('75 Acc.), 65, February 25, 2019, Kirkland. **JOHN HARRY MCNEIL** ('75 Poli. Sci.), 67, April 18, 2019, Spokane. **VICKIE LYNN BUSHEE** ('76 Env. Sci., '77 MCE Cont. Ed.), 66, May 1, 2019, Newport. **STEPHANIE JANE HAUGE** ('76 Spanish, Ed.), 65, March 2, 2019, Monmouth, Oregon. **BARBARA KERR** ('76 MS Psych.), 68, January 29, 2014, Sebastopol, California. **MOLLIANNE PICKETT** ('76 Gen. St., Delta Delta Delta), 87, December 27, 2017, Lacey. **JOHN CHARLES AMORUSO** ('77 Gen. St., '83 Sci.), 69, September 15, 2018, Vancouver. **JOHN JAMES HALEY** ('78 Elec. Eng.), 64, March 2, 2019, West Vancouver, British Columbia. **LORIANA MARIA NARIGI** ('78 Socio.), 63, March 7, 2019, Tacoma. **SUSAN**

TIERSMA GLERUM ('79 Ani. Sci.), 61, March 1, 2019, Brewster, Nebraska. **DANNY WESTER MILES** ('80 Mech. Eng.), 62, February 24, 2019, Lake Stevens. **SHIRLEY FAY SAVARESE** ('80 Home Econ.), 60, June 8, 2018, Gresham, Oregon. **MIKE N. FUNK** ('83 Ag. Econ.), 55, May 23, 2016, Wenatchee. **LEO C. BECK** ('84 PhD Ed.), 71, March 4, 2019, Everett. **KAREN NIEMANTSVERDRIET MCDONALD** ('84 Nursing), 56, December 11, 2018, Kailua, Hawaii. **ANIL Z. ABRAHAM** ('87 Fin.), 54, March 2, 2019, Renton. **JOHN DANIEL DOUGHTY** ('87 MS Civ. Eng.), 64, July 13, 2018, West Richland. **DANIEL W. O'BERRY** ('87 DVM), 58, December 12, 2018, Florence, Oregon. **RODERICK EDWIN HERMAN** ('88 Busi.), 68, June 28, 2018, Martinez, California. **ROBERT RAYMOND RECORD** ('92 MEd), 77, March 5, 2019, Wenatchee. **CAROLINE WELLS DONALDSON** ('94 Vet. Sci., '97 DVM), 54, May 1, 2019, Urbana, Illinois. **CHARLES W. HUFFINE** ('94 MA Socio.), 81, February 21, 2019, Chico, California. **DAVID PAUL PLATT** ('95 Mech. Eng.), 46, December 3, 2018, North Bend. **MATTHEW M. DECOMPALE** ('96 Comm.), 44, March 3, 2019, Little Rock, Arkansas. **BRIAN KEITH WILLIAM** ('98 Civ. Eng.), 43, April 16, 2019, West Bloomfield, Michigan. **CHARLES V. MUTSCHLER** ('99 PhD History), 63, March 10, 2019, Cheney. **JEFFREY A. GRUN** ('04 Busi., Delta Sigma Phi), 38, November 26, 2018, Meridian, Idaho. **FRANCISCO E. SALINAS** ('05 Soc. Sci.), 70, February 15, 2019, Puyallup. **DEVIN MICHAEL PEKEMA** ('10 Crim. Jus.), 30, March 30, 2019, Mukilteo. **JUSTIN RICHARD DEROSIER** ('13 Crim. Jus.), 29, April 13, 2019, Prescott. **KATHERINE C. SHEA** ('13 Psych.), 27, April 23, 2019, Portland, Oregon. **TERRY LEE BARE** ('17 Hum.), 52, October 9, 2018, Las Vegas, Nevada.

FACULTY AND STAFF

TOSHIO AKAMINE, 90, Education, 1967-1993, February 13, 2019, Palo Alto, California. ✶ **JERI AYALA**, 72, WSU Puyallup, 1994-2008, April 16, 2018, Tacoma. ✶ **JEFFREY BOYLE**, 65, Crop and Soil Sciences, 1985-2017, January 2, 2019, Eagle, Idaho. ✶ **DUANE CARLSON**, 90, WSU Puyallup, 1952-1990, February 19, 2018, Tacoma. ✶ **OLGA FELDMAN**, 77, WSU Extension, 1979-2006, July 13, 2018, Marysville. ✶ **THELMA HARMS**, 88, Nursing, 1979-1995, December 23, 2018, Spokane. ✶ **YANG (WENDY) LIU**, 36, International Programs, 2010-2019, May 19, 2019, Pullman. ✶ **DONNA MALONEY**, 89, Cougar Health Services, 1983-1993, March 13, 2019, Pullman. ✶ **RUTH MAUSS**, 88, Speech & Learning Sciences, 1982-1994, November 20, 2018, Costa Mesa, California. ✶ **ALICE ROTH**, 89, Nursing, 1980-1996, June 26, 2018, Couer d'Alene, Idaho. ✶ **PHILLIP SCUDERI**, 74, Chief Information Officer, Information Technology, 1977-2008, April 14, 2019, Carlsbad, California. ✶ **MURIEL SEARS**, 88, WSU Tri-Cities, 1976-1990, March 8, 2018, Richland. ✶ **L. MAXINE SKIPPER**, 87, Libraries, 1971-1972, 1984-1997, March 24, 2019, Richland. ✶ **ALTHEA M. SPENCER**, 94, Social and Economic Sciences Research Center, 1979-1995, February 11, 2019, Moscow, Idaho. ✶ **G. ROGER SPENCER**, 102, Veterinary Microbiology/Pathology, 1950-1978, April 27, 2019, Pullman. ✶ **BARBARA WALDHERR**, 79, Animal Disease Lab, 1988-2004, July 13, 2018, Spanaway.

CORRECTION

Ann White O'Dell was mistakenly listed in the Summer 2019 issue's In Memoriam. Her husband, Bob O'Dell, passed away. We apologize for the mistake.



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BY WILL FERGUSON

LASTwords

Ancient ink

As he inventoried archaeological materials in College Hall at WSU, anthropology doctoral student Andrew Gillreath-Brown pulled out a pen-sized instrument that had been tucked away for 40 years. Residue staining on the tip immediately piqued his interest.

He had chanced upon a 2,000-year-old cactus spine tattooing instrument, one that pushes back the earliest evidence of tattooing in western North America by more than a millennium.

The three-and-a-half-inch tool, with a skunkbush handle and ink residue on the end of its attached cactus spines, was made by the Ancestral Pueblo people of the Basketmaker II period in what is now southeastern Utah.

"Tattooing by prehistoric people in the Southwest is not talked about much because there has not ever been any direct evidence to substantiate it," says Gillreath-Brown, who wears his own sleeve tattoo of a turtle shell rattle, mastodon, water, and forest on his left arm.

No tattoos have been identified on preserved human remains and there are no ancient written accounts of the practice in the southwestern United States, so Gillreath-Brown's finding provides scientists a glimpse into the ancient art form. *



PHOTO ROBERT HUBNER

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WASHINGTON STATE MAGAZINE FALL 2019

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