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Cover: “Young Plants in the Morning Light” (Photo Adobe Collection)
Left: Seasonal Reflections on Lake Crescent (Photo Mint Images)
Every year, the WSU Foundation celebrates its most exceptional volunteers, who together set the standard for excellence in service and generosity. Congratulations to the 2021 honorees, who were recognized at the Volunteer Awards Celebration and Reception on the Pullman campus last fall.

The Gibson Award represents the highest distinction bestowed upon a WSU Foundation volunteer. The 2021 Gibson honorees are Duane and Terri Brelsford, whose passionate advocacy has furthered the dreams of students, faculty, and programs across the entire WSU system.

The Weldon B. Gibson Distinguished Volunteer Award

The Brotherton Award recognizes avid supporters of both Cougar Athletics and WSU. This year’s recipients, Clive and Shari Freidenrich, have been generous advocates for WSU students and Cougar Athletics for more than four decades.

A COUGAR CONGRATULATIONS ALSO TO OUR 2021 Outstanding Service Award Recipients

JOAN BERRY • LAURIE JOHNSON AND DAWN SMITH • RICH MCKINNEY

DR. BRYAN SLINKER • DR. JOHN TOMKOWIAK

Washington State Magazine is published quarterly by Washington State University. Editorial office: IT Building 2013, 670 NE Wilson Road, Pullman, Washington. 509-335-2388

Mailing address: PO Box 641227, Pullman, WA 99164-1227. Printed in the USA. © 2022 Washington State University Board of Regents. All rights reserved. Views expressed in Washington State Magazine are those of the authors and do not necessarily reflect official policy of Washington State University.

Washington State University is an equal-opportunity, affirmative-action institution committed to cultural diversity and compliance with the Americans with Disabilities Act. This publication is available online as text-only and in other accessible formats upon request: wsm@wsu.edu; 509-335-2388; 509-335-8734 (fax).
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**William F. “Biff” Brotherton Cougar Spirit Award**

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**A Cougar Congratulations Also to Our 2021 Outstanding Service Award Recipients**

**Joan Berry**, **Laurie Johnson and Dawn Smith**, **Rich McKinney**, **Dr. Bryan Slinker**, **Dr. John Tomkowiak**
Contact the Gift Planning team to learn more about how to support WSU through your will, revocable living trust, and beneficiary designations such as your life insurance, retirement plan, or other accounts.

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Eric Green, Financial Advisor at Purpose Financial, meeting with clients. As a member of the WSU Foundation Spokane Planned Giving Advisory Board, Eric regularly contributes his expertise and insights about complex gift ideas.
**Beneath the surface.** Brochures for many years at Yellowstone National Park have awed visitors with natural wonders that simmered and steamed: geysers, hot springs, colorful mud. The text claims to show a primeval and volcanic landscape before human occupation. But, like most tales, there’s more going on.

Thousands of years before those brochures were printed, Native Americans lived and traveled around Yellowstone’s lakes and mountains. They saw the heated, sulfurous waters, and they mined and carved obsidian tools. Yet, what created that obsidian?

The deeper mysteries of Yellowstone’s subterranean history inspire Washington State University geologist Peter Larson, his students, and colleagues to examine remote stretches of the supervolcano’s reach. Larson’s study of the rocks altered by chemical-laden waters at Yellowstone help our understanding of its past and possible future.

The technological world also hides secrets, some of them quite sinister. As cybercrimes, ransomware, and other online chicanery increases, WSU is ramping up the education of students and professionals in cybersecurity.

Houses and office buildings have their own hidden costs. They contribute significantly to energy usage and emissions, so WSU researchers are looking at ways to make buildings more efficient, and then getting that knowledge out to the public. It’ll save people money, too.

Some things shouldn’t remain under wraps, like mental health issues. For far too long, the topic has been something that wasn’t talked about. Former Coug and NBA basketball star James Donaldson (’79 Socio.) acknowledges his own struggles with mental health, and his bravery and honesty provide a model for us.

We can also learn a great deal from the life of grizzly bears. WSU’s Bear Center is home to a number of captive grizzlies—and, during hibernation, there’s a lot more going on with those bears than meets the eye. The bears’ innate ability to gain weight without getting diabetes or high blood pressure, and sleep for months without losing muscle or bone strength, has implications for how we treat human maladies.

Resilient grizzlies emerge after winter from dens in Yellowstone, amid evidence of a deep volcanic stirring, and reveal much about ourselves and our planet.
**TALKback**

**Still cheering**

I wanted to thank you and Joshua Snyder for sharing the beautiful photo of the wheel fence and Dahmen barn on the inside cover of the Winter 2021 issue. The fence was built by my great-uncle, Steve Dahmen. My great-aunt, Junette, was an artist and Uncle Steve said the fence was his art. Both Uncle Steve and Aunt Junette were huge Cougar fans, attending home and away games for football and men’s basketball. I know they would both be thrilled to see this photo; they loved hearing from people and seeing photos of their home place all over the country. They’ve both passed on but I’m certain they are still cheering for their Cougs.

JANN DAHMEN-MORBECK  
WSU PULLMAN, FACILITIES SERVICES

**Connections**

When I read the article about the Daily Evergreen, it reminded me of a fortuitous coincidence.

In the fall of 1966, the Daily Evergreen decided to help prepare students for that fall’s election by running columns by the presidents of the Young Republicans and the Young Democrats.

I was then a graduate student in political science and was serving as the president of the YRs. An undergraduate in political science, Sam Hunt (’67 English), was president of the YDs.

We formed a friendship and a connection that lasted over the years.

Almost three decades later, when I was serving as Washington’s Secretary of State, we had extremely challenging legislative proposals regarding vote-by-mail, the top-two primary, and extensive reform following the Gregoire-Rossi recount. Fortunately for me, Sam Hunt chaired the House committee that handled that legislation. He sponsored many of the bills and helped pass more.

Our Daily Evergreen connection helped make our state’s election system the best in the nation.

SAM REED (’63 HISTORY, ’68 MA POLI. SCI.)  
WASHINGTON SECRETARY OF STATE, 2001–2013

**More to the story**

As the author of *Polly Bemis: The Life and Times of a Chinese American Pioneer* (2020), editor of *Hidden Heritage: Historical Archaeology of the Overseas Chinese* (1993), and author/editor of other works on Asian Americans in the West, please allow me to point out several errors in the otherwise fine article, “How Chinese Pioneers Helped Build the Pacific Northwest” in your Fall 2021 issue.

First, Polly Bemis’s “Chinese name” was not “Lalu Nathoy” (p. 31)—there is no evidence for that name. “Polly Hathoy” is on her 1894 marriage certificate; her surname was recorded as Hathoy at the Idaho County Courthouse. The earliest occurrence of the name “Lalu Nathoy” seems to be in 1947, in Volume 1 of Sr. Alfreda Elsensohn’s *Pioneer Days in Idaho County*, p. 97. There she states, “As previously indicated, in the Certificate of Marriage, her Chinese name was Lalu Nathoy.” In a copy of that document the name Lalu is not mentioned.


PRISCILLA WEGARS  
AFFILIATE ASSISTANT PROFESSOR  
AND VOLUNTEER CURATOR,  
ASIAN AMERICAN COMPARATIVE COLLECTION, UNIVERSITY OF IDAHO

Editor’s Note: Read the Chinese tunnels article at magazine.wsu.edu/extra/Chinese-tunnels.

GREG CLARK (’84 Chem.) visited Lhasa, Tibet, and Beijing, China, in 2018. He was operations director for health care testing and analysis company Quest Diagnostics for 14 years and is now with the US Geological Survey as director of the Laboratory and Analytical Services division.
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The betwixt and between of [ENERGY-EFFICIENT] buildings

Meeting a state-mandated energy use reduction goal in 2030 will require both fresh ideas—and some serious in-depth training.
In the ongoing fight against climate change, Washington State University is addressing one of the largest, and largely unknown, climate offenders: buildings.

Residential and commercial buildings accounted for nearly 40 percent of energy usage and 36 percent of carbon emissions nationwide in 2020, according to the US Energy Information Administration. In Washington state, residential buildings account for nearly a quarter of all energy usage.

In 2018, Washington state legislators passed one of the strictest energy codes in the nation, as part of the state’s larger effort to reduce energy consumption by 70 percent by the year 2030.

Ryan Smith, director of the School of Design and Construction at WSU, says it will take a combination of fresh ideas and proper training for those in the industry to meet that goal.

“We have a pent-up demand for affordable housing in this country, and we have an unprecedented rate of homelessness. I believe as an architect and as an academic, that shelter should be a fundamental human right,” Smith says. “So the only way that we can deliver affordable housing over the long term is to ensure that that home is first built affordably and then can operate affordably.

“Climate change is real—if we can’t find ways to build and operate our homes and apartments more efficiently, we will run out of resources and it will cause a future that we can’t come back from,” he says.

Smith says WSU is taking a multifaceted approach to prepare students to address the intersecting housing and climate crises. The Integrated Design and Construction Lab (IDCL) recently entered a long-term partnership with Palouse Habitat for Humanity to build and study affordable, energy-efficient housing.

The school is also developing a curriculum focused on energy efficiency training for both students and professionals, thanks to a three-year, $750,000 grant from the Department of Energy.

Omar Al-Hassawi, assistant professor in the School of Design and Construction, is leading the team establishing the curriculum. Starting in 2023, WSU will offer undergraduate, graduate, and professional certificates, followed in 2024 by a new master’s degree.

“The Department of Energy identified competency gaps that we need to fulfill,” Al-Hassawi says. “The main areas we’re covering are energy modeling and performance of buildings during the design phase, mechanical system design, codes and standards at the...
state level and national level, user behavior in the built environment, and envelope design and construction.”

Al-Hassawi says the undergraduate and graduate level courses will be offered primarily online with some in-person components. The professional certification will be overseen by the WSU Energy Office in Olympia.

“We’ve assembled a team from WSU faculty and our energy program to help us develop the content,” Al-Hassawi says. “We’ve also established a technical advisory committee composed of national and some international members. So, we’re getting a lot of diverse, really good feedback from professionals and faculty members from different backgrounds to help refine this curriculum.”

Al-Hassawi says students will be prepared for a variety of situations, such as retrofitting versus new construction, and multi-family housing versus single-family housing. Students and professionals will need to take a specialized approach for each building.

The effort to make homes more energy efficient and high performing starts in the planning and development phase but finishes with those who actually use the building and its energy efficient features. Julia Day, assistant professor and IDCL director, has examined user behavior in the built environment.

“A lot of the research we’ve done is based on that principle of not only making sure that people understand how to use the building, but on the flip side of that, that designers understand how the people will use the building,” Day says.

Day and the IDCL are developing a tenant engagement program for the WSU Pullman campus. She says they worked with Facilities Services to identify three of the most energy intensive buildings on campus and are putting together educational materials and training for the occupants.

Day is also creating a course for undergraduates, graduate students, and professionals focused on human behavior, occupant comfort, building interfaces, and different ways to engage tenants.

“The students who are going to graduate at this time are going to be responsible for all the big decisions in the coming 25 to 50 years,” Al-Hassawi says. “Buildings they’re going to design are going to last and go well into the predictions of rising global temperatures, so they really need to have that knowledge.”

Nick Gibson is a senior in the Murrow College and editor of the Daily Evergreen.
After days of waiting in line at Kabul International Airport, people who had worked side-by-side with Washington State University faculty were turned away.

Under the US Refugee Admissions Program, Afghan nationals who worked with WSU on its English learning or agricultural outreach projects in the country could apply for refugee status in any country with a US embassy, allowing them the chance to resettle in the United States.

Though the US Air Force evacuated 125,000 American citizens, third-country nationals, and Afghans—one of the largest air evacuations in history—only a handful of the 110 people that contacted WSU for help were able to leave before the United States withdrew from Afghanistan on August 30.

By September 5, the Taliban stopped allowing evacuees to leave on planes. With the borders closed, many Afghans went into hiding to escape punishment for “un-Islamic activities,” such as working with foreign entities and educating women.

“It’s really personal when you know people,” says Scott Avery, director of graduate assessment at WSU and a former evaluation specialist for the Afghan eQuality Alliances and eLearning English Support projects. “We would’ve probably gotten more out if we had more time.”

Paul Whitney, associate vice president of International Programs, says the outcome was gut-wrenching.

“Those people were given false hope and that’s crushingly depressing, but those people saw what hope looks like and maybe there will be another opportunity in their lifetime or their children’s lifetime,” he says. “The people of Afghanistan deserve better, and we would be delighted to help them again in the future.”

Avery, who helped gather documents to assist in the visa process for the people WSU had contacted, had two stints in Afghanistan between 2009 and 2012 where he aided the US Agency for International Development (USAID) to rebuild the Afghan higher education system.

“We trained hundreds of faculty members and thousands of students in computer and English language skills, especially young women,” Avery says. “The amount of information online in their local languages is really limited, so English was critical to having access to current information for their disciplines.”

Chris Pannkuk, former director of International Research and Development at WSU, first went to Afghanistan in 2002 to conduct soil and water research. Over the next 15 years, he developed and implemented more than 10 projects to improve the Afghan government’s ability to deliver agricultural information to farmers. The last three projects with USAID funding were a partnership between four land-grant universities in addition to WSU: University of California Davis; University of Maryland; Purdue; and Texas A&M.

“What we were after is the capacity building of small-holding farmers to be more self-sufficient in agriculture production,” Pannkuk says. “We wanted farmers to be more resilient after we leave, and leaving Afghanistan in a better place.”

Oumarou Badini directed WSU’s Afghan Agricultural Extension programs for six years in Jalalabad, the capital of Nangahar, a province that shares a border with Pakistan.

“Despite dangers and the conflict-laden environment in which we were working, I left Afghanistan in 2017 with the feeling that we have contributed to a betterment of the most important resource in a country: the human resource,” Badini says. “But in the blink of an eye in August 30, everything seemed to be going downhill. The sentiment of loss and wasted time is still echoing in the minds of all those who participated in this endeavor.”

Retired administrator Mike Whiteman managed the guest house used by the five universities as their Kabul headquarters and oversaw program staff during WSU’s final three years in Afghanistan.

“We were trying to improve the Ministry of Agriculture, Irrigation, and Livestock’s ability to provide extension services across the country,” Whiteman says. “Most of the agents didn’t have a strong agriculture background, so they were trying to teach farmers things they didn’t really know themselves.”

The program’s location in rural Nangahar made it too risky for students to participate. But Whiteman says they didn’t face opposition from the Taliban.

“We were working in these areas that had huge security issues, but these farmers were benefitting from what we were doing, and we were left alone,” Whiteman says. “All I can do is hope that we had enough of an impact that what knowledge we left behind will have the momentum to perpetuate itself.”

Whitney says the work WSU did in Afghanistan, as well as its outreach work in Malawi and other countries, is in step with the university’s land-grant mission.

“We’re bringing the expertise of WSU to help solve problems around the world. Our students, our scholars, and the state of Washington benefitted from those experiences,” Whitney says. “I think WSU can be extremely proud of the work that was done there, that we helped improve the ability of Afghan farmers to feed themselves and their people.”

And though Afghanistan’s future seems bleak, Avery says the Afghan people are survivors above all.

“We met female faculty members who had gone through the Russian occupation, civil wars, the US invasion, and they were still there,” Avery says. “They were committed to making and building a better future for their country because they believed in their country and they believed in themselves.”

Leaving Afghanistan: WSU’s legacy

Looking back—photos: magazine.wsu.edu/extra/WSU-afghan-pix

Children pose outside a shop in Kabul, Afghanistan. Photo Chris Pannkuk
Who’s been sleeping?

THIS LAST WINTER, THE 11 GRIZZLIES AT THE WSU BEAR CENTER WERE DOING WHAT THEY DO BEST: A LOT OF NOTHING, AND WASHINGTON STATE UNIVERSITY RESEARCHERS WANT TO KNOW EXACTLY HOW THEY DO THAT SO WELL.
Bears have a certain genius for hibernation—they can pack on the pounds without getting diabetes or high blood pressure, sleep for five to six months straight without losing muscle mass or bone strength, and then, wake up and do it all over again. Understanding how they do this has a host of implications for humans from treating diabetes to preventing muscle atrophy in hospital patients and even allowing astronauts to withstand long periods in space.

“There’s an awful lot that bears can teach us in terms of their resilience to the development of disease,” says Heiko Jansen, WSU professor in integrative physiology and neuroscience. “We really have no indication that bears going through hibernation and being inactive suffer from all of the things that we do—and they do all this year-in, year-out. It’s a reversible process which leads to the question: how is it that these animals can simply turn that switch on and off, and survive?”

Decoding that switch is proving enormously complex. Using RNA sequencing, WSU researchers and their colleagues published a study in 2019 that identified thousands of genes involved in bear hibernation. In the fat-storing-tissue called adipose alone, more than 900 genes expressed themselves differently during the warm months, when bears gorge themselves on food, than during hibernation.

WSU is well-positioned to take on these difficult questions as the home to the Bear Center, the only research facility in the world with a captive population of grizzly bears. Then, there is the research team with complementary expertise in physiology, genetics, ecology, and nutrition, whose published studies are drawing increased recognition to the research potential to help understand bear ecology and provide insight into conservation as well as human health.

“We’re getting more and more interest from other researchers that bears might be a good model for what they’re studying,” says Charles Robbins, the wildlife biologist who first launched the bear program at WSU 36 years ago.

Robbins’s work in nutrition with the captive grizzlies combined with investigations into wild grizzly bear and polar bear diets has led to a healthier, more fat-heavy diet for captive bears of all kinds. This work demonstrates one of the key values of the center, Robbins says.

“If you just study captive bears, or just study wild bears, there’s a severe limit to what you can do,” he says. “By putting them together, we can learn so much more.”

Then, there are the human health implications. Robbins and Jansen are currently collaborating with Texas A&M researchers on a muscle atrophy study in the bears that holds promise for helping humans recovering from bedrest as well as for astronauts who lose muscle from prolonged periods without gravity. The WSU scientists are also exploring ways to induce hibernation in other animals, a line of inquiry that might one day help humans take extended trips in space.

The bears seem eager to help. All 11 grizzlies at the center come when called by name. They stand on scales to be weighed, and even the biggest among them willingly offer their hind legs for blood draws. Earlier this summer, a grizzly named Frank demonstrated how that worked. When Bear Center manager Heather Keepers opened the gate to his enclosure and called him, he lumbered over to a special place in the metal-bar fencing and stood up, towering above Keepers as she stretched up an arm to offer him a bottle full of honey water.

After he had a good taste, she moved the bottle down, and the bear promptly sat all 600-plus pounds of himself down and stuck his hind legs through two paw-sized gaps in the metal bars. Undergraduate volunteers rubbed his legs while he slurped at the bottle. Each time Frank responded well to a request, Keepers marked it with a sound from a hand-held clicker as part of a training method based on positive reinforcement.

This was just a practice run, but despite the proverbial warnings over not poking bears, Keepers says the grizzlies don’t mind a needle jab as long as the honey is flowing.

“We work for money—they work for honey,” says Keepers.

That love of sugar is a key scientific question, too. In a recent study, the researchers fed bears the simple sugar glucose at the wrong time of year. During hibernation, bears are not completely comatose and will get up occasionally, but they do not usually eat, drink, urinate, or defecate during that time.

Through the glucose study, the researchers learned that feeding during that period did interfere with the bears’ ability to hibernate. The study served as an extra warning to humans not to feed bears and provided an opportunity to see what’s happening when the glucose is introduced.

WSU evolutionary geneticist Joanna Kelley is currently using cell cultures taken for that study to investigate which genes are being activated in response to the ingestion of glucose before, during, and after hibernation. Her research team hopes to identify proteins that are changing the cells’ uptake of the sugar-regulating hormone, insulin. Diabetes in humans occurs when the body loses its ability to produce or respond to insulin.

“The ultimate goal is to translate all the things that we’re learning from insulin resistance in bears to humans,” says Kelley. “It’s a long road, but what we’re finding by looking at the bears is pretty fascinating.”

The Bear Center only draws blood from the bears a few times a year. Those samples are scientific gold for researchers not only at WSU but all over the world. The team grows cell cultures in petri dishes and freezes samples, so that they can be sent to researchers when they are investigating new questions. It’s almost like a library of cellular and genetic information, one that cannot be gathered easily from bears in the wild.

While 11 bears is not a huge number for animal models when compared to mouse studies, there are hopes to expand the center if funding can be found. Regardless, Jansen says, with careful work, the Bear Center researchers are able to design experiments with a lot of scientific rigor.

“We have a great community here that really loves the bears,” says Jansen. “It’s a vibrant group, and we collaborate with people all over the world to help them answer questions. That’s based on the recognition that what we have here is unique.”
For the love of a burger

BY REBECCA PHILLIPS

ANYONE WHO’S SPENT MUCH TIME IN PULLMAN likely remembers Cougar Country and their signature burgers, baskets, and to-die-for fry sauce. Now, those items and more are available in a new take-out restaurant in the WSU Pullman Compton Union Building.

The satellite cafe, named Cougar Country Underground, opened its doors to students, staff, and visitors last November.

“I’m excited to be back on campus,” says owner Michael Wagoner (’78 Ed.) who previously ran Zoe’s Underground Coffee and Kitchen in the basement of the K-House from 2008 to 2014. “It was the best time of my life with Zoe’s and all the students.”

Wagoner bought the original Cougar Country Drive-In when it went up for sale in 2019.

With the addition of Cougar Country Underground, he continues the college town’s long love affair with hamburgers and other fast food.

You might say the attraction began on May 15, 1948, when Chuck’s Drive-In Restaurant opened on the south end of Pullman, offering residents their first taste of car-hopped burgers, shakes, and fries. By 1954, two more were in business: Smoothies, a drive-in ice cream store, and the celebrated Burgerville, which sat in a tiny building off Davis Way just west of the city.

These early car-side eateries were part of a post-war obsession with drive-in fare that hit its height of popularity during the 1950s and ’60s. According to a Bunchgrass Historian essay by Robert E. King, at that time, a regular hamburger at Burgerville went for 35 cents. A generous helping of fries and a shake were another 30 cents each, bringing the meal to just under a dollar. Part of the charm was offering customers the area’s first drive-up window where they could order through a speaker.

By 1958, Pullman had welcomed its first chain restaurant, an A&W Root Beer Drive-In. A few years later in 1961, the franchise Arctic Circle Drive-In arrived. Another decade passed before Taco Time came to town in 1970, followed by the Cougar Country Drive-In in 1973.

These early chain and mom-and-pop drive-ins kept Pullman and WSU students happily supplied with burgers, chicken baskets, and other short orders until the next generation of drive-through restaurants debuted with the opening of Pullman’s first McDonald’s in 2019.
Peas, thank you

BY RACHEL WEBBER HOLM

WHEN YOU THINK OF PROTEIN, YOU MIGHT NOT THINK OF PEAS. BUT AS PROTEIN FROM PEAS MAKES ITS WAY INTO EVERYTHING FROM PLANT-BASED BURGERS AND NUGGETS TO PUFFED SNACKS AND PROTEIN BARS, THE LEGUME IS TAKING THE SPOTLIGHT.

Rebecca McGee has worked with peas for her entire career. As a plant breeder with the US Department of Agriculture (USDA) at Washington State University, she’s now working to develop peas with more protein—a food source that could help feed a population expected to reach 9 billion people by 2025.

It all begins with about 400 lines of yellow peas from the USDA’s collection of pea genetic material on the WSU Pullman campus.

Clare Coyne is the curator of the USDA Cool Season Legume Collection. She says yellow peas offer color and taste that consumers enjoy, as well as a structure that can be processed into plant-based food products, such as the Beyond Burger.

For the past three years, the two plant geneticists have been planting different lines at test sites in eastern Washington and Montana to catalog the protein content.

The effort is part of the Pulse Crop Health Initiative, a nationwide research project funded by Congress which seeks to find solutions to sustainability and nutrition challenges.

Most peas are about 18 to 22 percent protein. “A 25 percent protein pea would be stunning, a 27 to 28 percent protein pea would be amazing,” McGee says.

Ultimately, they want to pinpoint sequences in the DNA of yellow peas associated with high protein concentration and share it with plant breeders who can develop protein-rich varieties for growers.

“We’re focused on helping farmers,” Coyne adds. “The hope is that it will bring increased value to their crop.”

According to the USA Dry Pea and Lentil Council, the United States has produced a 10-year average of 1.025 billion pounds of yellow peas. The bulk of yellow peas grown in the United States comes from North Dakota and Montana, but peas also have their place in Washington state, where farmers grow both green and yellow peas. The peas are also successful rotation crops and promote good soil health.

“Yellow peas are great for pea protein. Our green peas are some of the best in the world,” McGee says. “Maybe there’s room for both.”

For people who are allergic to dairy or soy, pea protein offers a protein powder alternative. It can also add a boost of protein to foods like smoothies or baked goods that people make at home.

“It’s really exciting for a breeder,” McGee says. “And as a consumer, here I am on the other side of that, buying products made with plant protein.”

Girish Ganiyal, WSU’s food processing specialist, is helping improve the experience of plant protein for consumers around the world.

Last year, in Thailand and the Philippines—where snacks made with green peas are quite popular—he worked with food processors to help them tailor products based on the latest research. Meanwhile, he’s also working with Palouse growers who often donate some of their peas for research.

Working with both green and yellow pea varieties, the lab deconstructs peas into their macronutrients and wants to find out how different varieties might work in different food products.

As the go-to lab for extrusion processing, which forces a flour mix through an opening in a plate or die to produce a textured or puffed product, they can also test how particular varieties of pea protein translate into puffed snacks or textured proteins, like nuggets or patties.

He says the ultimate goal is to strike just the right balance between texture and nutrition.

“We look at the nutrition and we study functionality,” Ganiyal says. “Then we ask what type of product it should go into and find a home for it.”

From finding a home for peas to exploring the possibilities of new varieties, the research could bring high-quality, protein-rich peas and innovative products to the market and help feed the world.
So who does that?
They are cheesemakers, bookbinders, cowboys, bat wranglers, window washers, and lab managers. Often behind the scenes and performing essential work at Washington State University, staff members keep the university humming along. These are just a few of the hardworking people at the heart of WSU’s research and education mission.

JOE BECK, ZAC HOWELL, and JOHN JANE share one of the most illuminating jobs on the Pullman campus. As WINDOW WASHERS responsible for cleaning roughly 120,000 windows, they let in the light while also getting a first-hand look at academic activities.

“People willingly invite us into their space and tell us about their research or whatever they’re doing,” says Beck. “One time, I looked down a hallway and saw someone with a black puppy. But when I walked down there, it was a six-week-old grizzly bear. It was cool. His hair was like sandpaper.”

Beck and Howell follow in the capable footsteps of Barry Birdsell, who recently retired after 47 years on the job. Like Birdsell, the new crew has a few favorite buildings including Fine Arts, the TV and radio stations, and the raptor wing in the College of Veterinary Medicine.

“We see such interesting stuff,” says Howell. “It always changes.”

“When I get introduced to people for the first time and I tell them I make Cougar Gold cheese, they don’t believe me,” says SARAH BEALE, HEAD CHEESEMAKER AT WSU CREAMERY. “It’s kind of fun. Especially locally, everyone knows Cougar Gold.”

Beale has managed the day-to-day cheese-making operations at WSU Creamery for three years. Most days, she leaves her home north of Colfax at 5:30 a.m. in order to be at work by 6:30 a.m.

“We’re in the process of increasing production,” she says. “It’s half technology, half art. There’s a lot of science behind it, but it’s also a lot of feel.”

Cougar Gold, Smoky Cheddar, and Natural Cheddar take just over 24 hours to go from raw milk to the can. Viking cheeses, with their higher moisture content and lower acidity, are processed and canned in eight to ten hours.

“I have a lot of favorite flavors,” Beale says. “The Gold is obviously very good. I probably prefer the Viking cheeses, which are closer to a Monterey cheese.”

RACHNA NARULA got her first pair of glasses when she was in the first grade, and she’s been curious about eyes ever since. Now the OPTOMETRIST AT COUGAR HEALTH SERVICES (CHS), Narula says her position gives her a unique opportunity to assist and educate WSU Pullman students.

Partially funded by a student health fee, CHS offers on-campus medical, counseling, vision, and pharmaceutical services.
“Whether it’s primary care or psychology, we’re all in the same building,” Narula says. “It’s nice to go upstairs and talk to other providers to get more perspective. There’s a lot of collaboration.”

They provide workshops on stress management, substance use, and violence prevention as part of their health promotion efforts. Narula also gives presentations to students interested in the optometry field.

“We do a lot of education,” Narula says. “With students, it’s typically their first time navigating health care on their own.”

Narula provides routine eye exams, contact lens fittings, and treatment for eye conditions like dry eye, allergies, diabetes, macular degeneration, and glaucoma. She also offers same-day emergency appointments.

In the basement of Terrell Library, CONSERVATOR LINNEA RASH binds books, sews pamphlets, repairs paper, and tends to archived treasures. She makes a wheat starch paste in-house and her tools fold, cut, and crease. Through the last decade, she’s completed more than a thousand conservation projects for WSU Libraries. She flattens out rolled articles, encases fragile items in plastic, and builds boxes for books. In her toolkit are micro-spatulas, bone folders for folding and creasing materials, and some scalpels.

One of her favorite restoration projects was a small, black leather book of Gregorian chants from the 1550s. “It has a beautiful, simple decoration on the front,” she says. “It has these cool ties that hold it closed. I really love it.”

WSU’s cowboy BRENT MCCANN watches carefully as approximately 200 head of cattle graze the hills about seven miles southwest of WSU Pullman’s main campus. McCann MANAGES THE ENSMINGER BEEF CENTER, where he works with animal sciences students and faculty on research and training at the facility’s barns, fields, and classrooms. McCann brings over 25 years of experience in the cattle business, beginning from his youth in north central Montana, that helps him run the center as a functioning ranch.

Managing two research labs can get tricky, especially when you throw in bats and zebrafish. TAMASEN HAYWARD coordinates the lab work for neuroscientist Allison Coffin and biologist Christine Portfors at WSU Vancouver, where they study hearing loss and auditory systems.

Hayward (’15, ’17 MS Biol.) notes that bats need their hearing to survive and, unusually, can regenerate or compensate for hearing loss as they age. The Portfors Lab has about 30 short-tailed fruit bats, including four albinos, and the 40-year-old colony has been vital to research.

Several research projects in Coffin’s lab, including testing prescription drugs to see if they cause hearing loss, keep Hayward busy. Zebrafish are used in the lab due to an excellent organ system on the outside of their bodies that’s very similar to inner ear human cells.

Hayward supervises lab assistants, too. “One of my favorite parts of being the LAB MANAGER is being able to mentor the new undergrads and sometimes high school students,” she says. "*"
Designing women

BY CARRIE SCOZZARO

COVID-19 forced many Americans indoors in spring 2020, so interior designers found themselves having to get even more creative.

Working from home and at-home schooling quickly became pervasive “design dilemmas,” says Tanna Edler (’88 Busi.), whose design for a modern farmhouse-inspired kitchen snagged top honors from the Interior Design Society in 2020. “With families gathered, stay-at-home mandates, and dining in, our kitchen design has elevated, and clients were begging for easy solutions.”

That’s only one way the pandemic changed trends in home design. Spending more time at home influenced people’s overall use of personal space.

Trends include “kitchen-type” zones throughout the house, from bars in basements and home offices to small refrigerators in family rooms and even master bedrooms. Edler also saw a rise in designated spaces—such as bonus rooms, libraries, and places family members can escape to when needed—as well as home-office remodels, in-home gyms, and more heavy-duty, performance-based fabrics and easy-care surfaces.

“Our ‘live easy’ mantra says a well-designed home makes us happier, and that is our focus,” says Edler, whose eponymous Tanna By Design is based in Yakima.

In Spokane, Shaleesa (Mielke) Mize (’13 Int. Des.) stayed busy helping clients get more organized. They were wanting to contain their lives in a tidier way “or fix the little things in their home that have irritated them for years,” says Mize, who started Pacific Design Company in 2017.

Some clients have also sought indulgences like soaking tubs and saunas, notes Mize. Her company includes an online home décor shop that epitomizes hygge, a design trend derived from a Danish word equating to coziness and comfort.

Keys to Mize’s approach are empathy, communication, organization, and—because the persisting pandemic has pushed out lead times on products and supplies alike—flexibility.

“We can do our best to strategize and prepare, but I’m finding that both designers and client need to be willing to roll with the punches since there is just no predicting what could happen next,” Mize says.

The push for more flexible spaces, sustainable building practices, and more and smarter use of technology are the trends designer Mallory Fair (’15 Int. Des.) saw throughout the pandemic.

HVAC systems that better circulate air are another design imperative, says Fair, who interned at prestigious firm Olson Kundig in Seattle, joined KDA Architecture in Yakima, and now works on both commercial and residential projects for the Bend, Oregon-based Pinnacle Architecture.

In one of their recent community medical clinic projects, says Fair, the firm incorporated more technology-driven touch-free systems, as well as more isolation areas. High-durability finishes and non-porous surfaces that are easily cleaned and sanitized also became increasingly popular, Fair notes.

She advocates for collaboration toward a cohesive, whole-building design. It’s a service-oriented approach she honed at WSU while working with the Rural Communities Design Initiative as well as through the national LEED Green Associate program, which focuses on sustainable building practices. The professional accreditation prepared her “well for my National Council for Interior Design Qualification certification,” Fair says.

“I want to provide spaces that better people’s lives rather than being a box,” she says. “WSU’s program emphasizes designing with purpose.”
ANDRÉ PICARD JR. picks up the hand drum and, in a strong resonant voice, begins singing a Nez Perce song to his rapt student audience.

“Our music is not written down anywhere,” says the visitor to the Washington State University ethnomusicology class. “I can match up with background sounds like a hum, or with other singers. Turns out good that way. Sort of like a jam session—you never know where it goes.”

Picard is a Nimíipuu (Nez Perce) tribal member from Lapwai, Idaho, who on Indigenous Peoples’ Day last October spoke to several classes taught by associate professor of music Melissa Parkhurst.

Parkhurst studies Native American music in the Pacific Northwest and has recorded oral histories and hundreds of songs of the Nimíipuu people both in the field and at WSU School of Music recording studios.

“A lot of what I do is recording the culture bearers singing songs and talking about music they heard growing up and how it’s been meaningful in their lives through the present day,” she says. “I’m hoping to eventually publish an anthology that would be useful for the tribe.”

Parkhurst has recorded a range of music performed by Picard and his wife and sons.

“The last session they did was all stick game songs,” she says. “Stick game is a traditional guessing game that’s played family against family and is popular in the Northwest. While one team hides bones in their hands, they sing power songs to distract the other team from guessing who’s holding the bones.”

Those recordings will eventually join a large body of earlier music collected by Loran Olsen, professor emeritus of music and Native American studies.

“Loran worked with the Nez Perce community for several decades and set up the Nez Perce Music Archive,” Parkhurst says. “He compiled all known sound recordings of the Nez Perce from 1887 through 1974—over 300 hours of music.

“Loran also compiled a body of historic recordings known as the Sam Morris Collection,” she says. “Morris was a Nez Perce tribal member who made recordings with his own Edison phonograph between 1909 and 1912. There are around 60 songs of his friends and family members singing a wide variety of genres, all recorded on wax cylinders.”

In the 1990s, those cylinders were discovered for sale online and brought to Olsen’s attention. He helped WSU acquire and later return them to the tribe in Lapwai, along with the Nez Perce Music Archive. The recording machine remains housed in WSU Manuscripts, Archives, and Special Collections.
“It’s a really precious body of music,” Parkhurst says. “Part of my work with a recent grant from the WSU Center for Arts and Humanities will be to continue recording Nez Perce singers. We’d like to see it go beyond 1974 to give young people a chance to hear the voices of their grandparents—to know Nimíipuu culture is alive and thriving today.”

Parkhurst is collaborating with Olsen on an upcoming book to be published through WSU Press entitled Nimíipuu We nipt: Songs of the People.

In 2014, while teaching in Oregon, she published To Win the Indian Heart: Music at Chemawa Indian School, an account of music-making practices at the nation’s oldest continuously operating Native American boarding school, outside Salem.

“Chemawa impacted Native families all over the Northwest including the Nimíipuu,” Parkhurst says. “I don’t want to minimize the trauma so many thousands of children experienced in the boarding school system, but I do want to argue that music making often gave these children the friendships and skills that helped them get through some of life’s challenges.”

Instead of causing the children to assimilate as the school had hoped, she says music-making activities often put protective factors in place like the presence of a genuinely caring adult as well as social bonding with peers, a sense of competence on their instrument, and sometimes even pride in their tribal heritage.

With COVID-19 vaccines now readily available, Parkhurst and her team hope to resume documenting the Nimíipuu peoples’ musical heritage through field recordings planned for the spring and summer of 2022.

One of her last pre-pandemic recording sessions took place in 2019 at the Talmaks Camp, a 122-year-old Nez Perce Presbyterian church camp near Craigmont, Idaho.

“There were kids, adults, and elders all gathered there for two weeks with daily church service and music,” Parkhurst says. “We recorded songs in English as well as Nez Perce translated hymns.

“Preserving and documenting this traditional Nimíipuu culture is just one way we can serve the First Nations people on whose land the WSU Pullman campus is located.”

The path wasn’t easy to Puget Sound, but George and Isabella Bush and their family had a plan to settle in the American West. They weren’t provided many choices, since George was a Black American who had left his farm in discriminatory Missouri in 1844.

The Bushes traveled the Oregon Trail with George’s close friend, Irish-American pioneer Michael Simmons, his family, and several other Missouri families seeking a new life on the frontier. The expedition was primarily funded by Bush. However, even though slavery was abolished in the Oregon Territory, exclusionary laws wouldn’t allow Black pioneers to settle there.

The Bush-Simmons party crossed the Columbia River and finally settled near present-day Tumwater at the south end of Puget Sound. With the blessing of the British Hudson’s Bay Company and friendship with Chief Leschi and Nisqually Tribe, they established the first non-Indigenous American settlement in Washington state. Simmons, who refused to live where his friend George could not, would become instrumental in establishing Washington Territory.

The 880-acre family farm at Bush Prairie produced prize wheat and other crops, which George and Isabella were notably generous and selfless in sharing with other settlers moving into the area. They were credited with saving a number of lives during the famine of 1852.

Although in 1850 the US Congress excluded Black Americans from making land claims, the Washington Territorial legislature successfully petitioned Congress to allow the Bush family to retain ownership of their farm.

The farm at Bush Prairie passed to the eldest son, William Owen Bush, after his father and mother died. Owen, as he was called, continued the farm’s success with grain and produce that received accolades not only regionally, but also at national venues such as the 1893 Chicago Exposition.

Owen was elected to the state House of Representatives in the new state of Washington in 1889. The first Black legislator in the state, his priorities centered on agriculture and race. Owen and fellow legislators passed Washington state’s first civil rights bill on March 27, 1890.

The following day, the legislature, with Owen leading the way, passed a bill “to establish a State Agricultural College and School of Science.” That college in Pullman eventually became Washington State College, then WSU.

More than 130 years later, on November 19, 2021, a monument to George Bush and his family’s pioneering legacy was dedicated at the state capitol campus in Olympia. A duplicate monument will also be dedicated on the WSU Tri-Cities campus to honor William Owen Bush’s role in Washington State’s founding.

FIFTEEN YEARS LATER, DERRICK LOW STILL REMEMBERS WHAT HE WAS THINKING WHILE RUNNING UP THE HILLS OF SUNNYSIDE PARK IN THE PULLMAN SUMMER HEAT.

"Our team motto," remembers Low ('08 Soc. Sci.), speaking from his home state of Hawaii. "Turnaround Year."

Across the Pacific Ocean and several time zones in Florida, Low’s teammate, Kyle Weaver, reminisces, “You couldn’t script that season. It was amazing to see the growth in ourselves and coach.” Weaver (’08 Gen. Stu.) adds, “We just clicked. For us to do what we did, it was a very special time.”

Low and Weaver, players on the 2006–07 Washington State basketball team, have memories from the historic season as vivid as if it happened yesterday, from grueling preseason conditioning to a season-ending heartbreaking loss at the NCAA Tournament, which propelled the team to further success the next year.

The seeds were planted in 2003 when then Athletic Director Jim Sterk brought Dick Bennett out of retirement as head coach. Dick, who led Wisconsin to the Final Four in 2000, brought his son Tony Bennett to Pullman.

For three seasons, the elder Bennett guided the team before handing over the reins to Tony after the 2005–06 season, a 11–17 campaign, the tenth consecutive losing season for the program.

“It’s a painful process to rebuild,” Tony, now head coach at the University of Virginia, says.

“He (Dick) took the bullets of those three years and grew those guys up through the school of hard knocks,” remembers Tony, while en route to a plane that will take him and his Virginia team to a game at Houston.

In addition to his father, Tony is emphatic to credit two other individuals as he looks back on his first season as a head coach and his time at Washington State.

“I think about a couple of people who don’t get enough mention, Jim Sterk and (Deputy Director of Athletics) Anne McCoy,” Tony says. “They were such a key bringing my dad out of retirement and having the faith to give me a chance even though I was an unproven head coach. They constantly encouraged the way we were building the program.”

The moment when Tony and the players knew they had turned the corner was a December game against Gonzaga.

The Cougars defeated the nationally ranked Zags, 77–67, in front of a sold-out crowd at Beasley Coliseum.
“All of the guys stepped up,” Tony says. “I remember saying, ‘Okay, this group can come together and compete with most teams.’”

“That was the switch I believe,” Low says. “That was the defining moment of our T.A.Y. season.”

Ending the regular season with a 25–7 record, the Cougars earned their first berth to the NCAA Tournament since 1994.

At Sacramento for its first and second round games, the team practiced while the coaches wore T.A.Y. shirts.

After a first-round win against Oral Roberts University, the Cougars’ run ended with a dramatic 78–74 defeat to Vanderbilt in double-overtime.

As painful as the loss was, the game served as a source of motivation, which would pay dividends a year later.

“The Vandy game, that was huge for us, even in the loss,” Weaver says. “It gave us a taste of being in the tournament and the feeling that we deserved to be there.”

The following season, the Cougars once again advanced to the second round of the tournament, this time facing Notre Dame in Denver.

For his pregame speech, Tony brought back a reminder of the Vanderbilt game.

As Tony spoke, he held up a picture of the scoreboard displaying the final score.

“I remember saying, ‘I want you to take a look at this. We get a chance to change the script,’” Tony says. “It’s going to take you to stand in there and not flinch.”

“He knows exactly how to motivate his players,” Low says of coach Bennett. “He knows the spot to hit.”

Tony, and the players, hit the right spot as the Cougars dominated Notre Dame, 61–41, to earn a berth to the Sweet Sixteen.

After the game, Tony had one more use for the picture.

“Coach Bennett took the picture of the Vandy scoreboard, and he punched it to the floor,” Low says.

Since leaving WSU for Virginia in 2009, Tony has experienced much success, including a national championship in 2019; however, it is the players from the 2006–07 team who still hold a special place in his heart.

“When my dad got the job, he said at his opening press conference, ‘I have to recruit players that I can lose with first before I win. That I can go through adversity with. Because if I have those type of people, eventually, we are going to learn from the wisdom that it provides,’” Tony says.

“They stuck with it,” Tony continues. “And it was hard. They lost together, they stayed together and represented what we valued in our program, and they found ways to do it. It was special.”

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**A NEW TURNAROUND?**

The 2021–22 season for men’s basketball has stirred up a lot of hope for WSU fans. Second-year coach Kyle Smith’s Cougs show a lot of potential and could return to the NCAA tournament for the first time in 12 years.

Both new and returning talented players, such as Noah Williams, Efe Abogidi, and DJ Rodman, have skills that can fit with the coach’s data-driven approach to basketball. As the team coalesces, keep an eye out for future success.

Derrick Low leads the victorious Cougs after defeating Notre Dame in the NCAA Tournament. Video frame courtesy CBS & Pac-12/ NCAA (watch game at youtu.be/ph7sGVLP-hw)
The Cup runneth over

A RECORD-BREAKING VICTORY by the resilient Washington State University football team last November brought the coveted Apple Cup back to the Palouse for the first time since 2012.

Led by Max Borghi’s running, Jayden de Laura’s arm and leadership, and fired-up play on both sides of the ball in Seattle, the Cougs handed the University of Washington Huskies their largest margin of defeat in Apple Cup history at 40–13.

The Cougar team dominated the game, especially in the second half. The defense stifled the Huskies, led by senior linebackers Jahad Woods and Justus Rogers, and senior safety Armani Marsh’s pick-six to cap off the game.

Senior running back Borghi carried the ball a career-high 22 times for 129 yards and two touchdowns, which tied him for most touchdowns in WSU history.

It wasn’t just the veteran players who got in on the fun. Sophomore quarterback de Laura slung the ball with over 84 percent accuracy to freshman De’Zhaun Stribling and redshirt sophomore Donovan Ollie. Senior receivers Travell Harris and Calvin Jackson Jr. also caught plenty of passes.

The WSU faithful poured onto the field after the final whistle to celebrate with the team and coaches.

The Apple Cup took place in a time of turmoil, not only with the pandemic, but for the coaching staffs of both the Huskies and the Cougars. The UW team had earlier fired its coach and offensive coordinator, while WSU head coach Nick Rolovich and four assistant coaches had their positions ended in October due to noncompliance with the COVID-19 vaccine mandate for state employees.

WSU defensive coordinator Jake Dickert took over the reins, and the team rallied for the remainder of the season with an astounding Apple Cup win and chance to play at the Sun Bowl on December 31.

About a day after the Apple Cup, WSU Athletic Director Pat Chun announced that the “interim” tag was removed and Dickert would become the 34th head football coach in program history.
Stopping crime that pays

With their vast stores of personal data, Washington State University and other higher education institutions are prime targets for hackers looking to graduate from small-time credit card theft to big-time virtual havoc makers.

Ransomware attacks, in particular, have hit the education sector harder than any other industry during the pandemic. Nearly half of all universities and K–12 schools globally were targeted by ransomware in 2020, according to a recent survey of IT professionals by the cybersecurity firm Sophos. This included attacks against the University of Utah and the University of California, San Francisco, which both forked over large ransoms to obtain decryption keys for their data. But so far, WSU has escaped a similar fate.

Adding up the costs of downtime, repairs, and lost opportunities, the average ransomware attack cost educational institutions a staggering $2.73 million in 2020. “The threat of ransomware has always been in the background, but it has really come to the fore over the last three years or so and continues to pick up,” says Tom Ambrosi, former assistant vice president and chief security officer at WSU. He worked at the university for 19 years, until last December. “Email is the primary threat vector, and universities are so heavily targeted because users often have account credentials that enable them direct access to research, payroll, and student data.”

One of the factors influencing the increase in ransomware attacks has been the work of phishing for email login credentials to less experienced hackers, who then sell the compromised account information to the highest bidder.

“Cybercriminals are employing people who are willing to cast a wide net to get access to the easiest prey as fast as possible,” says Sasi Pillay, vice president of Information Technology Services (ITS) and chief information officer. “This makes it easier for the hardcore cybercriminals to focus on encrypting data and harder for law enforcement to figure out which actor is actually performing or conducting the attack.”

To combat the growing threat, Ambrosi and Pillay spent the better part of the last decade spearheading efforts to overhaul WSU’s online defenses to make it more difficult for hackers to target the greatest cybersecurity weakness of any organization: their people.

For example, WSU’s email protection services scan malicious attachments and block a daily average of 70,000 threatening emails, or 50 each minute, from even making their way to university email inboxes.

Probably the most effective change has been the implementation of multifactor authentication (MFA) for many WSU online services. MFA requires users to provide a secondary verification to log into a university account following initial password entry.

Prior to the implementation of MFA in the summer of 2019, WSU ITS reported an average of 1,000 compromised accounts each month that required reset by their team. After the implementation, Pillay says, “to the best of his knowledge, the university hasn’t had a single successful attempt at compromising an MFA-affiliated account.”

In addition to increasing online security for its faculty, students, and staff, WSU is also helping to educate the next generation of cybersecurity professionals.

Last summer, the university established the NORTWEST VIRTUAL INSTITUTE FOR CYBERSECURITY EDUCATION AND RESEARCH (CySER) with the help of a $1.5 million Department of Defense award.

The institute is one of the first three funded in the United States by the Department of Defense’s Air Force Military Command. Led by Bernie Van Wie, professor in the Gene and Linda Voiland School of Chemical Engineering and Bioengineering, CySER will train students in cyber basics, operations, or defense, offering bachelor’s degrees as well as specialized certificates.

It will capitalize on the research expertise of WSU scientists such as Assafaw Gebremedhin, associate professor, and Haipeng Cai, assistant professor, in the WSU School of Electrical Engineering and Computer Science. Gebremedhin and his doctoral student James Halvorsen are using machine learning techniques to generate synthetic data that could help simulate cyberattacks.

“There isn’t a whole lot of good cybersecurity data out there, so machine learning gives us the capability to simulate the kind of attacks we expect to happen,” Gebremedhin says. “This then enables us to come up with solutions for how best to respond.”

Cai’s work focuses on ensuring mobile apps are doing what they are supposed to and not acting maliciously (e.g., disclosng private user data). He and his team developed a tool called DroidCat that uses a technique based on program analysis to identify abnormalities in the behaviors of apps operating on a user’s smart device.

“What we enable you to do is see whether apps on your phone are actually doing the things they are supposed to be doing,” Cai says. “It lets you know when something is going wrong with one of your apps, and you may want to address it.”

CYBERCRIME ON THE RISE

Source: SIGNAL/AFCEA

- Ransomware remains the most prominent malware threat. (Datto, 2019)
- In 2020, 33 percent of attacks on government were ransomware. (Security Intelligence, 2020)
- In 2021, the largest ransomware payout was made by an insurance company at $40 million, setting a world record. (Business Insider, 2021)
- About 1 in 6,000 emails contain dubious URLs including ransomware. (Fortinet, 2020)
- Since 2020, 1,681 higher education facilities have been affected by ransomware attacks. (Emisoft, 2021)
- The total ransomware costs are projected to exceed $20 billion in 2021. (Cybercrime Magazine, 2019)
- Remote workers will be the main target of cybercriminals throughout 2021. (Security Magazine, 2020)
Asparagus

BY A D R I A N A  J A N O V I C H

TENDER SPEARS POKE UP THROUGH THE EARTH, SIGNALLING SPRING.

The fast-growing stalks—harbingers of the new season and more good things to come in the garden—are among the earliest crops of the year, emerging when soil temperatures reach around 50 degrees. They’re also among the most labor-intensive.

As you pile bacon-wrapped asparagus atop a serving platter or place a pickled spear into a tall and tangy bloody mary, consider this: each individual stalk is cut by hand.

Harvesting asparagus is stoop labor, performed with bent backs and hip baskets holding up to 15 pounds of the delicate, herbaceous, earthy vegetable. Cutters rise before dawn, donning headlamps to help them see stalks rising from still-darkened fields. Shoots are sliced at their bases with a V-tipped knife and a swift and forceful jab. They’re sorted and packed before shipping from throughout the Columbia Basin and Yakima Valley to grocery stores around the country and Canada.

At the industry’s peak in 1990, when canned asparagus was king and Washington state led global production of green asparagus, farmworkers here cut 102 million pounds from 30,000 acres. Today, local farmers grow 22 million pounds on roughly 4,500 acres, the focus is on fresh, and competition is fierce. Despite its drop in acreage and production, Washington remains among the top three asparagus-growing states, along with California and Michigan. And it’s known for its high-quality crop.

Asparagus—mostly green, sometimes purple, rarely white around these parts—has been cultivated here for more than 100 years, but it originated around the Mediterranean Sea, growing from Syria to Spain. Ancient Greeks, Egyptians, and Romans all enjoyed asparagus. The cookbook De re culinaria, or De re coquinaria, believed to date from the first century CE, contains a recipe for an asparagus-and-herb omelet. Frescoes found at Pompeii depict bundles of asparagus.

The perennial plant is dormant most of the year. But, during the height of growing season, it can sprout anywhere from five to
seven or more inches in a day. Long, straight spears are prized. Crooked shoots are culled. So are really thin ones, which drain nutrients from more robust stalks.

Once tips begin budding, asparagus turns tough and fibrous, so it’s best enjoyed while it’s young. Choose firm spears with compact tips, and take a sniff. Asparagus lets you know when it’s been sitting too long. More and more, it’s traveled here from Peru or Mexico.

In 1991, around the height of the War on Drugs, the United States enacted the Andean Trade Preference Act, giving duty-free imports and grants to Andean countries trafficking cocaine into North America. Peruvian asparagus, heavily subsidized by the US law, was allowed to enter America tariff-free. Canneries in Dayton, Walla Walla, and Toppenish closed.

Today, America’s asparagus crop confronts overseas competition that didn’t carry much weight 30 or 40 years ago. And not all US retailers are willing to pay a premium for Washington state asparagus, which costs more than foreign-grown spears. Labor and production costs drive up the price. Plus, cutters can be hard to find and keep.

Hand-harvesting “exposes workers to harsh outdoor environments, repetitive hand movement, continuous bending, and other risks for physical injury,” says Manoj Karkee, assistant professor in the Department of Biological Systems Engineering at the College of Agricultural, Human, and Natural Resource Sciences at Washington State University. “In the long term, we’d like to have machines perform hard-labor jobs, like picking asparagus.”

Karkee leads a research program in agricultural automation and mechanization with an emphasis on sensing technologies for apple and cherry crops. While his department has not worked on asparagus for about ten years, he notes it’s “a unique crop that requires selective harvesting every day for an entire growing season while other crops generally require one or two passes.”

That’s a main challenge in mechanizing the short but intense harvest, which runs six to eight weeks from April to June. So is limiting damage to crowns and spears that haven’t yet come up, says Tim Waters (’02 Biol., ’04 MS, ’09 PhD Entom.), the regional vegetable specialist at WSU Extension of Franklin and Benton Counties. “There are a lot of variables in choosing which spears to harvest, and machines have had difficulty honing in on those things like the human eye does.” Plus, he notes, “asparagus has to be picked at the right time. If you wait or miss harvest by a day, that could be the difference between breaking even, making money, or losing money.”

Some customers are willing to pay more for organic asparagus, which has seen an increase in acreage in recent years. So has America’s appetite for asparagus. US asparagus consumption is slowly creeping up, from 1.76 pounds per capita in 2018 to 1.83 in 2020.

Overall, though, US asparagus acres are declining, from nearly 83,000 in 2000 to 20,000 in 2020. America imports nearly seven times the amount of its total asparagus production.

Waters encourages consumers to buy asparagus locally and seasonally, looking for the band wrapped around bunches that proudly proclaims “Washington” as its origin. If you see asparagus in the produce aisle outside of the state’s growing season, it likely does not hail from here.

Another option: buy asparagus directly from growers at farmers markets.

“Nothing tastes quite like it,” says Linda Burner Augustine (’83 Home Econ., Honors). “It has a gentle, kind of nutty, green flavor.” And its “substantial but tender” texture stands up to pasta or grains such as quinoa or farro. “It’s really nice in a bowl.”

Augustine collaborated with Jamie Callison, executive chef at the WSU School of Hospitality Business Management at Carson College, on The Crimson Spoon. The 2013 cookbook from Carson College carries a recipe for roasted asparagus. “It cooks quickly,” Augustine says, noting asparagus is “easy to work with, especially if all of the spears are the same diameter, and there’s very little waste. It’s just really friendly to the cook in the kitchen. It truly is one of my favorite vegetables.”

Her 30-Minute Asparagus Chicken Skillet is a popular recipe on her A Year at the Table blog. But one of her favorite preparations of asparagus—low in calories and high in iron, fiber, and vitamins A and C—is roasting it with lemon zest, olive oil, salt, and pepper, then serving it with grated Pecorino Romano or Parmigiano-Reggiano cheese.

Asparagus reminds Augustine of spring, of course, and elegance. “It’s one of those vegetables,” she says, “that makes everything on the plate look a little more beautiful.”

PHOTO ART RACHEN/UNSPLASH

PHOTO ART RACHEN/UNSPLASH
feature

A deep burning under a thin skin

WSU GEOLOGISTS UNEARTH SECRETS
BENEATH YELLOWSTONE’S FIERY BEAUTY

BY REBECCA PHILLIPS
From the air, Grand Prismatic Spring resembles an enormous multicolored eye. Set in Yellowstone’s volcanic caldera, the hot spring gazes up with a brilliant blue “pupil” surrounded by vivid rings of turquoise, green, yellow, orange, and rust.

Third largest in the world, Grand Prismatic is heated by an underground magma chamber that boosts the blue part of the pool to around 200 degrees Fahrenheit. As the water spreads out and cools, it creates distinct layers that support specific types and colors of heat-loving bacteria.

Not only do the bacteria tolerate extremely high temperatures, they also endure dangerously low pH levels. In essence, Grand Prismatic Spring is a beautiful vat of boiling acid.

The spring is just one of Yellowstone National Park’s 10,000 hydrothermal features that range from mud pots and geysers to fumaroles and travertine terraces like Mammoth Hot Springs. Their eruptions and bubbles indicate that the rare hotspot volcano is very much alive, a fact confirmed by constant seismic activity.
WASHINGTON STATE UNIVERSITY GEOLOGY PROFESSOR PETER LARSON has spent 16 years investigating Yellowstone’s hot springs as well as the nearby rock formations that were altered by these complex waters.

“The rocks are discolored reddish and white at the Lower Falls of Yellowstone River, where it plunges into the Grand Canyon of the Yellowstone,” says Larson.

“I tried to get approval from the Park Service to do field work there in 2006, but they said it’s too difficult to recover people who fall or get injured. So, we were granted research permits to work downstream at Seven Mile Hole.”

Larson says when hot springs flow through subsurface rocks, they react with them chemically, leaving tell-tale alterations. Studying these alterations provides clues to prior activity of the hydrothermal fluids at Yellowstone—including hints as to when the massive supervolcano might once again erupt.

“The last violent eruption was 640,000 years ago,” says Larson. “A thousand cubic kilometers of ash fell over much of the US, to east of the Mississippi River. It was the third in a cyclic series of eruptions at Yellowstone.

“There was a big one 2.1 million years ago that produced the Huckleberry Ridge Tuff and another about 800,000 years later with the Mesa Falls Tuff,” he says. The most recent eruption occurred 660,000 years after that, and it’s now been 640,000 years since that event. Past behavior isn’t always a true prediction of the next eruption but we’re somewhere in that window of when you might expect another big one.

“It’s not going to happen anytime soon,” he cautions. “But it would be nice to have an idea and that’s part of the motivation for our research.”

Larson says the Yellowstone caldera is a hotspot volcano that formed from an errant plume of magma rising through the Earth’s mantle. The magma melts rocks in the crust, creating the shallow chamber and much deeper reservoir that superheat Yellowstone’s hydrothermal features.

Unlike Mount St. Helens in the Cascades, hotspot volcanoes do not occur along the edges of tectonic plates. Instead, the tectonic plate moves over the hotspot, creating a chain of volcanoes, which in time become dormant as they move off the plume.

“Yellowstone is the continental equivalent of Hawaii as a volcanic system,” says Larson.

Since 2007, Larson has organized rustic research trips into Yellowstone for many of his graduate students. Though recently retired, he maintains a lab in support of his last doctoral student, Jarred Zimmerman, who is investigating altered rocks in the Grand Canyon area of the park.

“Jarred’s work is important because when basalt magma works its way into the crust beneath the caldera, it creates a rock called rhyolite that causes catastrophic eruptions,” says Larson. “We can estimate the amount of basalt being input into the crust by looking at how active the hydrothermal system has been. The altered rocks give an indication of that.”

Sampling those altered rocks, however, is dangerous and challenging.

“You have to hike three miles into Seven Mile Hole and then it drops 1,000 vertical feet into the canyon,” says Zimmerman. “I carry a big backpack with three liters of water plus rock hammers, bags, a shovel, and GPS.” And he never goes alone.

Zimmerman says that over time, changes in hot water levels created a highly acidic environment that “chewed on the rocks and made them crunchy,” which helps with identification.

“We are looking for signs of volcanic cyclicity in the rocks,” Larson adds. “Has the rate of basalt recharging into the crust been constant or varied over the years? We’re in a period right now where there’s a lot of basalt coming in.”

That finding aligns with Larson’s earlier studies on hot water discharge in the Morning Mist Springs in Yellowstone’s Lower Geyser Basin. Larson says it’s another way to measure the activity of the magma.
In 2014, he and University of Idaho (UI) geologist Jerry Fairley set out to determine how much water and heat were coursing through the hot springs. 

“Basalt is coming up from the mantle into the lower crust,” says Larson. “The heat goes in the bottom and comes out at the top. We wondered if we could estimate how much magma is coming in by doing a thermal balance.”

To avoid harming sensitive bacteria living around the hot spring edges, the pair spiked the springs with deuterium, or heavy water, a safe compound that quickly dilutes to background levels.

Water samples taken throughout the day revealed, surprisingly, that the amount of magma entering the crust is likely much higher than previously thought. At the minimum, Larson estimates it as half the amount that is coming up under Kilauea volcano in Hawaii.

Their technique not only provides a new way to calculate how fast molten rock is recharging the Yellowstone caldera but also gives insights into the potential for future eruptions. The study
was published in 2018 in the journal *Geosphere*.

Olivia Hecimovich (‘21 MS Geol.) also conducted her graduate research on Morning Mist Springs during follow-up studies with Larson and Fairley. She too spiked the springs and found similar results. On days off, she joined Zimmerman in hiking the Grand Canyon of the Yellowstone and collecting altered rocks at Seven Mile Hole.

“The research was so enjoyable,” Hecimovich says. “It was a great experience. I felt like I was in the backcountry just living out of my tent. It was nice to wake up to have elk right outside and then make some coffee with my lab partners.”

Larson says his work has been successful “due to the fact I’ve had good students who are willing to climb into the canyon and carry out rocks to do analyses. It’s a great training ground and many have gone into good careers in the geosciences industry, USGS, research, and academics.”

Larson’s program has been funded by the National Science Foundation, in partnership with the UI, the United States Geological Survey, and Oakridge National Laboratory.

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Tracking the hotspot

**BEFORE IT BECAME A VOLCANIC WONDERLAND** in Wyoming, the Yellowstone hotspot spent millions of years “traveling” through Washington and Idaho.

Ferried by plate tectonics, the North American continent has been gradually moving west over a plume of molten magma that periodically burns through the Earth’s crust, spewing lava onto the surface. As the continent moves off the plume, a trail of dormant basaltic floods and calderas is left behind.

That plume or hotspot once occupied the grounds of Washington State University Pullman, where evidence of volcanic flows can be seen in the rocky cliffs that border the southwest corner of campus.

“We’re sitting on some of the earliest history of the hotspot right here with the Columbia River basalts which underlie Pullman to the depth of 2,000 feet,” says WSU geology professor emeritus John Wolff.

“Those lavas were erupted from gigantic fissure vents that extended down through southeast Washington and Oregon 16 million years ago. We know because we have vertical walls of rock called dikes that are exposed in this region.”

Wolff says the massive eruptions created a basaltic floodplain that stretches from Spokane south to the Oregon-Nevada border—and from the Idaho panhandle west to the Pacific Ocean. Similar fissure vent eruptions have recently taken place on Hawaii’s Kilauea volcano.
According to retired San Diego State University geologist Victor Camp (’76 PhD Geol.), the Yellowstone hotspot can be traced back even further to the Pacific Ocean off the coast of Washington.

Camp speculates that prior to 50 million years ago, the hotspot was part of the Siletzia oceanic plateau which later crashed into the North American continent during the Eocene. Evidence of the event is visible in exposed fragments of Siletzia rock on Vancouver Island, the Olympic Peninsula, and the Coast Ranges of Oregon and Washington.

From there, Wolff says, the hotspot slowly moved east eventually flooding the Pacific Northwest with layers of basalt.

Then, about 14 million years ago, along the southern Idaho-Oregon border, something strange occurred. The hotspot’s fissure vent eruptions abruptly gave way to caldera volcanoes capable of producing super-eruptions.

“The calderas progressively formed a chain all the way through southern Idaho leading up to the present-day location at Yellowstone,” Wolff says. “There were many calderas in the Snake River Plain 8–11 million years ago, and they produced huge eruptions of the Yellowstone type.”

Not only did the hotspot volcanoes change physical form, but their magma type changed as well. Gone were the placid basaltic flows. These calderas erupted extremely dangerous rhyolite, a type of rock that is formed when magma melts granite in the Earth’s crust.

A rhyolite eruption explodes with showers of molten glass that essentially enamel the entire landscape, killing every living thing on the surface. Ash particles also shoot into the stratosphere and gradually spread around the globe.

Wolff holds up a large chunk of shiny black rock. “The calderas erupted a kind of obsidian with crystals called vitrophyre,” he says. “It’s typically black glass which mostly crystallizes into gray rock soon after eruption.

“We find examples of it in bluffs all over southern Idaho, in the mountains and in the Bruneau Hot Springs area. The Black Rock Escarpment is a spectacular exposure. You can see layers in the cliffs there and each layer was a different eruption.”

Wolff says that in the future, the Yellowstone hotspot will likely continue to travel in an east-northeast direction toward Montana. Though nobody knows for certain, it could potentially keep moving forever.
James Donaldson stands tall, projecting the pride and power of a former collegiate and professional athlete. The former Washington State University basketball and NBA player towers above most everyone, even other NBA players. Their average height: not quite 6 feet, 5 inches. He’s 7 feet, 2 inches. People look up to him in more ways than one. That’s what his first book is about. *Standing Above the Crowd* explains his strategies for success in athletics, business, and more. A few years after its 2011 publication, though, a series of stressful events changed his outlook. “I looked OK. I seemed like I was fine. But,” Donaldson says, “I wasn’t my normal self anymore.”

Donaldson (’79 Socio.) had nearly died, enduring four major surgeries in five years. His business began faltering. He owed back taxes. Money was running out. His wife left, taking his stepson with her. His mom died. Holiday season hit.

“The walls were closing in on me,” Donaldson says. “The loneliness was kicking in. And I just could not sleep. My mind was racing 100 miles an hour, trying to figure out how to save my business and how to exit this world. Those were my two all-consuming thoughts, especially at night. I really did not think I was going to make it. Life wasn’t worth living anymore. It was all dark and hopeless.”

Donaldson details his struggle in his latest book. Written during the COVID-19 pandemic lockdown and published at the end of 2020, *Celebrating Your Gift of Life: From the Verge of Suicide to a Life of Purpose and Joy* aims to conquer the stigma of men, especially male athletes and men of color, showing perceived weakness by talking about mental health and asking for help. “Most men just won’t go there,” Donaldson says. “I want them to see that I’m a big man, a strong, athletic guy, and I’ve gone through the same stuff and made it through.”
Donaldson played basketball under famed Coug coach George Raveling. A year after graduation, Sonics coach Lenny Wilkens gave him his first pro gig, launching a 16-year NBA career that included All-Star status. Donaldson, inducted into the Pac-12 Hall of Honor and WSU Athletic Hall of Fame, also played for several European teams and toured with the Harlem Globetrotters before retiring from basketball.

“I still went to the gym every day. I was still running three or four days a week. I was eating right. I’ve been a vegetarian for 35 years. I don’t smoke. I don’t drink. I never did drugs,” says Donaldson, who suffered from aortic dissection at 57 in 2015. “It came out of nowhere. I had no idea I had any kind of heart issues.”

Things snowballed throughout the next three years. The period from Thanksgiving to Christmas 2017 was Donaldson’s darkest. At first, “I thought I had a sleeping disorder,” says Donaldson, who made an appointment to see his doctor. After months of spiraling downward, “he quickly diagnosed me with having depression and anxiety and suicidal ideation.”

Donaldson started seeing a counselor, taking anti-anxiety medication, and reaching out. He contacted a small group of “go-to guys”—including Coach Raveling, Coach Wilkens, and former WSU quarterback Jack “Throwin’ Samoan” Thompson (’78 Busi.)—asking if he could call or text at one or two in the morning if he needed to talk. “Men, especially athletes, are used to drawing up a game plan and getting to a goal. I needed someone or something driving me toward where I needed to go.”

Donaldson felt compelled to start sharing his struggle after the January 2018 death by suicide of a fellow Coug. WSU junior quarterback Tyler Hilinski was 21. “I didn’t know him, but his death shook me to the core,” Donaldson says. “I think the reason it resonated with me so much was because we were both Cougar athletes. His death motivated me to fight back and make mental health my new advocacy.”

Donaldson had lost his home and his business, Donaldson Clinic, a physical therapy practice. “I was no longer a husband. I was no longer a businessman. I was no longer a homeowner,” he says. “It wasn’t until I started regaining purpose that I started getting back on solid ground.”

In 2019, he established Your Gift of Life, a nonprofit foundation for mental health awareness. Before the pandemic, he visited schools, sharing his experience and message with students. Today, he aims to continue that work as well as to raise money for scholarships for people of color studying to go into mental health professions. “It’s become the next chapter.”

History in the (wine)making

BY LAUREN PATERSON

Samantha Hege (‘12 Neurosci., ’16 Psych.) and Colton Smith (’16 Integ. Plant Sci.) are breathing new life into a historical vineyard on Washington’s southern border.

The couple learned about the Dallesport property from a family friend. Right away, Hege noticed the thickness of the trunks and the strength of the vines. “These are old vines, and not the kind of plants you usually see in an area dominated by pears, cherries, and apples,” she says. “To see vines that were five decades old was a fun surprise.”

So was discovering the vineyard’s ties to their alma mater.

Hege and Smith learned former owner Don Graves planted a test plot in the late 1950s with the help of “Father of Washington Wine” Walter Clore. Clore was a horticulturist at what’s now Washington State University’s Irrigated Agriculture Research and Extension Center in Prosser. He is credited with discovering Washington’s propensity for grape growing.

Once Graves’s test plot began producing, WSU research winemaker George Carter made wine from the grapes. In the 1960s, after seeing success, Graves planted a full 16-acre vineyard. Grenache, syrah, cabernet sauvignon, and riesling vines still stand on the property, which lies within a mile of the Columbia River.

“Our goal is to get the vineyard to the right place and start making wine,” says Hege, who first met Smith at The Coug while she was a WSU admissions counselor and he was an undergraduate student.

During lunch, the men at the next table—including Smith—invited her and a colleague for a drink. After that, she started seeing him everywhere on campus. Eventually he asked her out, bringing along a bottle of Napa Valley cabernet to their first date.
She later served as head of hospitality at Napa Valley’s Spottswoode Estate while Smith worked in production and winemaking at nearby Colgin Cellars.

Now, they are working with WSU’s Klickitat County Extension to learn local vineyard best practices and how to incorporate the latest viticulture and enology research into their farming regimen. They have partnered with an investor and put together a plan to revive Graves Vineyard and start winemaking on the estate.

“We are proud of Colton for accepting the wonderful challenge of rejuvenating a part of our history associated with Walter Clore and the Washington wine industry,” says food scientist Charles Gould Edwards, one of Smith’s favorite professors in WSU’s viticulture and enology program.

Jim Harbour (’99 Hotel & Rest. Admin.), scholarly associate professor in the School of Hospitality Business Management at Carson College, calls Smith and Hege “really hard workers” who both “thrive under pressure and intensity. I look forward to having an excuse to go taste wine in the Columbia Gorge.”

Smith and Hege plan to expand grape-producing acreage, build a winery, and eventually buy the property.

“It’s a five-year plan and, when we purchase the property, our sweat equity will be included,” says Smith, who—along with Hege—started making regular weekend visits to help with renovations beginning in November 2020. In June 2021, the couple moved to the property to work on the vineyard full time.

“We are both committed to organic, regenerative farming practices that will allow mother nature to speak clearly as the greatest force on this unique property,” Hege says, noting they plan to use most of the fruit from the 2021 harvest for small fermentations to help them better understand the terroir. They’ll use that information to adjust their farming practices and winemaking protocols to improve the quality of the fruit and the wine. They plan to release their first vintage later this year.

“I am very appreciative of my time at WSU, and all the great memories,” Smith says. “To be coming back to Washington state to renew a historic vineyard on the Columbia River is a blessing and extremely motivating.”

Pathways for a new education

Imagine the high school of the future.

In the mind of Chris Reykdal (’94 Soc. Stu., Ed.), most juniors and seniors wouldn’t even be on campus for half of the day. They’d be in community colleges, labs, job sites, and technical training courses. After “rounding out core instruction” in ninth and tenth grades, students could meet learning standards for math, science, English, and social studies with a variety of different experiences.

Looking ahead 10 years, Washington’s superintendent of public instruction would like students to use their 2,000 hours of learning in the last two years of high school to “explore what they’re interested in.” He’d like all high schoolers to have a “high school and beyond plan” dovetailed with the current job market.

Lines between high schools and technical and community colleges should be blurred, he says, so younger students could earn more cross credits and get into programs now reserved for those older than 18. Students should also be able to earn high-school credit for work experience and apprenticeships, he says.

“In the 1990s, we opened up transitioning between high school and community college with academic routes, such as Running Start,” says Reykdal, in his second term as superintendent. He’s served since January 2017 and has helped lay the foundation for his high school of the future by overhauling graduation requirements to rely less on standardized tests and more on multiple pathways to demonstrate readiness.

Reykdal didn’t wait until high school to find his own pathway. By seventh grade, he knew he wanted a career in public education. He credits his elementary school teachers for this desire to teach and lead. “There was so much sense of self and value I got from their teaching,” says Reykdal, the youngest of eight siblings and first to go directly from high school to college.

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“I had outstanding educators through my entire WSU journey,” he says. “Dr. LeRoy Ashby was perhaps the most knowledgeable instructor I ever had in history, and he delivered it in multiple modalities—auditory, visual, and hands-on. He was gentle but funny, knowledgeable but approachable. He was definitely part of my inspiration for my teaching style later on. Chris Sodorff in the education department taught us how powerful our impact could be as classroom teachers. And Dr. Marina Tolmacheva, my professor for Islamic history, taught compassion, but also called me out once during one of her lectures for talking too much to my future wife, Kim.”

He completed his student teaching at his alma mater, Snohomish High School, then taught history in Longview, while his wife, Kim Reykdal (’94, Soc. Stu., History, Ed.), taught in Battle Ground. Then they both earned master’s degrees at the University of North Carolina—his in public administration, hers in counseling.

Returning to Washington, Reykdal worked as a fiscal analyst for the Washington State Senate, then became operating budget director and deputy director for administration for the State Board of Community and Technical Colleges. Starting in 2010, he served three terms as a Democratic state representative. In line with his passion for student success, he helped pass a bill to provide financial assistance to low-income students who are taking college-level credits while in high school.

Besides giving students multiple pathways to graduation, Reykdal is passionate about universal access to early education for 3- to 4-year-olds and kindergarten readiness for 4-and-a-half-year-olds. He’s encouraged by recent expansion of Head Start and the Early Childhood Education and Assistance Program. In elementary schools, he’d love to expand dual-language learning so students spend all day learning subjects in two languages.

For middle school, he envisions longer learning blocks and a trimester system that would allow students to have more choices to explore different subjects. In all grades, he advocates for more stable funding for students with disabilities.

Outside of the office and classroom, the Reykdals are avid hikers, especially in the Central Cascades, Alpine Wilderness, and Capitol Forest. They also hit trails at Mount St. Helens and Hurricane Ridge last summer. “It is a de-stressor to be in nature, away from a lot of people, and within terrain that is always changing,” Reykdal says, adding, “I really don’t like treadmills.”

They’re often joined by son, Carter, 17, and daughter, Kennedy, 15. “We don’t prescribe a path for them, only that they focus on three things: work with a purpose (making a larger contribution), investing in meaningful and healthy relationships (connection), and belief in a higher power (humility).” ♦

Growing up in Tacoma, Jamerika Haynes-Lewis was enamored with Pierce County’s Daffodil Parade, particularly its royalty court. She wanted to be a princess.

“I would see the Daffodil princesses waving from their float, and I always wanted to do that,” she says.

But, as a foster kid who moved around a lot, “being able to do certain things was hard. Afterschool activities was one of them.”

Haynes-Lewis (’10 Comm.) spent 13 years in the child-welfare system and never competed for a place on the Daffodil court—or in any other pageant—during that time. Now, as the reigning USA Ambassador Ms. 2021, she’s advocating for a more supportive system for foster children and their families. Her platform: “A Chance to Succeed: Empowering Youth in Foster Care.”

She says, “I want foster youth to know they’re not their circumstances. With the right support, they can go on to live productive, happy, fulfilled lives. And they are worthy of that.”

Haynes-Lewis won the title last July 31, her birthday, in Tampa, Florida. Since then, she’s been sharing her story, making appearances both in person and virtually, and volunteering for her cause.

“We have to give our young people a chance,” she says. “We can’t assume anything or take anything for granted.”

Haynes-Lewis grew up in a variety of living situations—from group homes and kinship care to foster homes where she was the only child or one of five foster children. “It was hard,” she says. “You’re away from your family. You don’t quite understand what is happening. And you’re dealing with other people and their expectations.”

When she told one foster mom she wanted to be an actress, Haynes-Lewis was encouraged, instead, to pursue journalism. She didn’t start competing in pageants until she was a 19-year-old student at Tacoma Community College, where she saw a flyer advertising the Miss Pierce County Scholarship Program. She
participated two years but didn’t place. And when she transferred to Washington State University her junior year, she says, “I had a lot on my plate.” Pageants took the backburner. “With the Miss America Organization, you age out at 25,” says Haynes-Lewis, now 35 and living in Seattle. “I just thought my chances were over.”

At WSU, she worked at Cable 8 as a reporter as well as in the station’s production and programming. She also worked at KUGR radio and for dining services and completed a journalism internship in Lewiston. She was involved with the Black Student Union. And she was highly motivated.

“When I found out my mother’s rights were terminated I felt completely on my own and alone,” she recalls. “It served as a catalyst for me to do good in school from a young age. When I was at WSU, I was very driven. I was a straight-A student. And I had a lot of unresolved feelings of anger. At times, I felt very stigmatized. I felt like people looked down on me because I was in foster care, I came from a family that was poor, and I’m a darker-skinned African-American.”

Haynes-Lewis worked as a newspaper reporter in California right out of college, returning to Washington state to work as a communications specialist for the YMCA of Greater Seattle. In 2016, she founded Clever Jam Communications, a consulting business offering motivational speaking, workshop facilitation, and strategic communication services.

Five years ago, in honor of her thirtieth birthday, she posted a life-changing selfie on Facebook. A woman who had seen the photo messaged her privately about pageants, encouraging her to participate. After a ten-year break, Haynes-Lewis went to one to support a friend and got swept up in the thrill of it all. “There was this feeling of nostalgia, seeing all the make-up and the dressing room lights. I realized I really missed competing,” says Haynes-Lewis, who decided to enter the USA Ambassador Pageant.

She competed three times and was first runner-up twice. “This third time, I said, ‘I’m going to win.’ I did mock interviews every week for two years straight,” she says. “The monkey wrench was the pandemic. Because of the pandemic, the pageant was postponed.”

But it gave her another year to prepare. “I started taking martial arts classes with my husband. I worked out. I was in the best shape of my life. I was ready.”

But, she says, “You can have women win by one-tenth of a point. There was definitely that pressure.”

She scored highest in the final part of the competition: the on-stage question. “Having a communications background helped me,” says Haynes-Lewis, who—in addition to advocacy—is pursuing modeling and acting. When she won, she says, “I just jumped up and down. It was something that I wanted so bad for so long. I cried my entire crowning.”

Tunnel visions

BY BRIAN HUDGINS


Recently graduated from WSU and awaiting his trip to Laughlin Air Force Base in Del Rio, Texas, he worked as a research assistant on several projects that centered around using tiny beads instead of smoke to visualize air flow.

“A photo would show the movement of the bead during the exposure as a vector which could be measured,” Thirtyacre explains. “Another experiment involved using white noise injected into the wind tunnel to increase the energy of the airflow and improve wing aerodynamics.”

The experience with WSU’s wind tunnels helped propel Thirtyacre through 26 years of active duty as a fighter pilot and gradual transition to his role as chair of the department of flight at the College of Aeronautics of the Daytona Beach, Florida-based Embry-Riddle Aeronautical University (ERAU).

During his Air Force career, Thirtyacre served as an assistant weapons officer for four years at Ramstein Air Base in Germany before being assigned as chief of weapons and tactics at Aviano Air Base in Italy. From 1997 to 2014, he served at Nellis Air Force Base in Nevada.

He finished a master’s degree at ERAU in the early 2000s and taught at Nellis AFB as an adjunct professor. Those experiences as both student and educator gave Thirtyacre a path to return home to Washington, where ERAU has five campuses. “Back here, we have horses, chickens, and everything on a farm,” says Thirtyacre, who grew up in University Place, just south of Tacoma, and now lives in Eatonville.

The ERAU department of flight is dedicated solely to drones, and one of Thirtyacre’s
top concerns is drone operational safety. With the growth of small unmanned aircraft systems, Thirtyacre says, “The degrees offered have to keep course content current, which is difficult in a fast-moving industry.”

The ERAU curriculum for unmanned systems instruction has grown to over 30 courses—everything from how to pass the Federal Aviation Administration exam to industrial inspection courses and several courses for public safety agencies. Even for experienced pilots, there is a learning curve. “Every one of the faculty is a pilot,” Thirtyacre says. “Students are trained to not only fly, but to do it precisely and accurately. Going from manned aviation to a drone, it is totally different.”

Once the mechanics are mastered, practical uses for drones span far and wide. Last year, ERAU assisted marine biologists by using drones to monitor injured mammals, such as seals who need medication or help getting disentangled from objects. Through a partnership with Verizon and use of a drone platform, the drones deliver data without increasing the mammals’ distress or disturbing the surrounding environment.

“We set up about 10 different aircraft with a test area for them,” Thirtyacre says. “We came up with some good rules of thumb for what aircraft to use, how close to fly, and how to approach wildlife.”

Now, Thirtyacre teaches undergraduate and graduate aerodynamics. And he has a home-built wind tunnel in his garage, a passion that was ignited nearly 35 years ago at WSU.

NEWmedia

DAVID ARNOLD ’88 HISTORY
WSU PRESS: 2021

It started with Rich Stager (’74 Civ. Eng.), a freshman who made up flyers and posted them around campus. A scrappy group of, at that point, non-rowsers started turning out Saturday mornings to help build a shellhouse—only to have it destroyed in a savage windstorm a year later. Back then, Cougar Crew had no coach, no money, and no boats. Despite its humble beginnings, including help from the rowing program at the University of Washington, Cougar Crew grew into one of Washington State University’s most successful club sports and its only varsity club sport.

Former WSU oarsman David Arnold, now a history professor at Columbia Basin College, went on sabbatical to write this detailed history of the first 50 years of Cougar Crew. His well-researched account discusses the program’s hardscrabble start, struggle for equipment and funding, and impressive perseverance. Overcoming challenges and working hard together helped the “Boys in the Boat in the Wheat Fields” become a tight-knit, committed team, one that produced national champions as well as a couple of rowers who went on to win Olympic gold.

Those Olympians, along with former coaches and oarsmen and women, recall the camaraderie, grit, white caps, key races, and other highlights that built the program into what it is today. Drawing from more than 90 personal interviews, back issues of the Daily Evergreen and the Pull Hard newsletter, and more, including reporting from this magazine, Arnold offers a comprehensive look at the formative years and continued growth of Cougar Crew—from the long-running reign of Coach Ken Struckmeyer, the 1979 Pac-10 Coach of the Year, to the birth of women’s rowing at WSU and the recent era known as “The Reawakening.” Pull Hard! is a must-read for past, current, and future members of Cougar Crew, its coaches, parents of WSU rowers, and fans of Pacific Northwest rowing.

— Adriana Janovich

Athena’s Piano
ALLEN JOHNSON ’85 PHD
BOROUGHS PUBLISHING GROUP: 2021

He’s older. She’s younger. He’s White. She’s Black. They come from different New York City neighborhoods—and different eras.

Set in both 1924 and 2019, this time-travelling romantic thriller tells the incredible story of Tony Marco, who becomes enchanted with a piano and the ghost of its former owner, the sultry jazz pianist and vocalist Athena Cruz. He travels back in time, into her world, and into her heart.

Inspired by the jazz scene of the Harlem Renaissance, Athena’s Piano features a cast of real-life characters with cameo appearances: Billie Holiday as a young girl, poet and playwright Langston Hughes, and legendary jazz pianist and composer Fletcher Henderson.

But the story centers around the sinister and lecherous nightclub owner Cal Craven, who gives Cruz the Steinway Duo-Art Pianola at the beginning of the book. It opens in Harlem in 1924, then flip-flops back and forth for several chapters between that time and place to the modern era. Marco is a 35-year-old surgeon, Iraq War veteran, avid cyclist, and musician who—in Greenwich Village in 2019—begins dreaming of Cruz.
She’s a 28-year-old jazz pianist and vocalist. And, after repeatedly declining Craven’s advances, her life is in danger. When a handsome visitor from the future falls into her life, they bond over their shared love of Charles Dickens, he writes a song for her which he performs in a “feathery baritone,” and the plot thickens.

This fast-paced, adventurous romance features issues of race and gender, corruption, heart-wrenching chases, a Russian assassin, and a love that transcends time and space. Author Allen Johnson, a psychologist, jazz vocalist and instrumentalist, and avid cyclist who lives in the Tri-Cities and is a former guest columnist for the Tri-City Herald, wraps it all up tightly and conveniently.

— Adriana Janovich

Echoes of Exclusion and Resistance: Voices from the Hanford Region
EDITED BY ROBERT BAUMAN AND ROBERT FRANKLIN (‘14 MA HISTORY)
WSU PRESS: 2020

He called Kennewick “The Birmingham of Washington”—and on a hot day in May 1963, Jack Tanner led a large group of Black residents, many of whom worked at Hanford, in protesting the town’s cruel exclusion of non-White minorities.

Despite the risk, they marched the streets with signs reading, “Why is Kennewick all White?” “Jim Crow is Dead, Bury Him in Kennewick,” “I Can Scrub Your Floor But Not Live Next Door,” “Kennewick Racism Must Go,” and “Where are the Dogs?”

Tanner, a Tacoma attorney and active member of the NAACP, went on to become a federal judge. But that day he and others fought a deeply entrenched system of discrimination in the Tri-Cities area that rivaled anything in the Deep South. In fact, many Black people felt racism was worse in central Washington.

This story is one of many long-forgotten incidents vividly portrayed in the third volume of Hanford Histories, part of the Hanford History Project established at WSU Tri-Cities in 2014. The book takes an in-depth look at the experiences of non-White groups whose lives were impacted by the Hanford Site and the ways they found to challenge and resist ongoing segregation and disparity.

From its beginning in 1943, when the US government appropriated 670 square miles of land along the Columbia River, the Hanford project sparked multicultural conflicts.

The Wanapum tribe, for example, was suddenly evicted from their ancestral winter village and forced to relocate elsewhere. Black Americans who migrated north in search of construction jobs were segregated in East Pasco with few services or amenities. Latinos who followed in the 1970s and 1980s were similarly steered towards East Pasco.

Many of the revelations come from oral history transcripts, including recent interviews conducted by Robert Franklin, that provide a fascinating window into the lives of Ellenor Moore, who served on the Pasco School Board and Washington State Women’s Council, and Wallace “Wally” Webster, former president of the Tri-Cities chapter of the Congress of Racial Equality and Hanford employment manager.

Overall, the volume is framed by the poignant voice of Japanese American George Yamauchi, who, while on furlough from the army in 1943 and with family imprisoned in internment camps, wrote to the editor of the Pasco Herald.

“What is an American,” Yamauchi asked his mid-Columbia community. “Is he white, black, yellow, red, or any other certain color? It is generally conceded that he is any one of these or a mixture of them all. That is one of the principles of our Constitution, is it not?”

— Rebecca Phillips

Butch’s Game Day
TONY POSTON ’08 POLI. SCI., ’11 CRIM. JUS., ILLUSTRATED BY GREG TURNER-RAHMAN ’96 MS ARCH., ’04 PHD
COLLEGE HILL: 2021

It’s Saturday, and little Butch T. Cougar couldn’t be more excited. His beloved Cougs are playing. It’s time to don crimson and gray, and head up Stadium Way. This charming children’s picture book follows young Butch and papa Butch to campus, with stops at The Coug, Ferdinand’s, and more. Tony Poston, founder and former CEO of branded merchandise company College Hill, was inspired to pen the story after the birth of his son, Jack. Proceeds will help fund scholarships for students who portray the WSU mascot.

— Adriana Janovich

BRIEFLY NOTED

From Inez to Andrew
ANDREW WHIPPLE (‘99 ED.)
2021

After retired US Army officer Andrew Whipple heard about a tragic Blackhawk helicopter accident, he was inspired to write a poem memorializing the pilots. He started writing more poetry when he was given a book of poems by his grandmother Inez. She had written about World War II, and the sacrifices in battles and on the homefront. Whipple’s book combines Inez’s poetry with his own. He also writes about his struggles with PTSD and sees his writing as a way to help fellow veterans and soldiers.

The Wing is the Thing!
ROBERT G. CLARKE (‘60 HISTORY)
2021

Aspiring pilots can learn more than a few things from this slim volume by longtime flight instructor and pilot Robert Clarke. He taught pilots how to fly safely for over four decades, including 5,000 flight tests. The book addresses practical applied aerodynamics and many aspects of flight.
Cougar VIII. Uncork your smile.

alumni.wsu.edu/CougarVIII
**CLASSnotes**

**GREGORY “DEKE” GASSETT** (’80 Crim. Jus.) already had a Drug Enforcement Administration Purple Heart, Medal of Valor and Kevlar Survivors Award from the International Association of Chiefs of Police, and Washington State University Alumni Achievement Award. Now the retired DEA agent can add the Secretary of Defense Medal for the Defense of Freedom to his collection of honors. The medal, created in 2001, is the civilian equivalent of the US military’s Purple Heart.

After retiring from the DEA in 2008 as the assistant special agent in charge of the Seattle field division, Gassett served as an international law enforcement executive mentor and program manager, supporting the US mission in Afghanistan for nearly ten years. In late 2011, he and his partner, both contractors, were attacked by insurgents after a meeting in Kabul. Their vehicle was hit by a rocket-propelled grenade, and both men were injured.

Nearly ten years later, in June 2021, Gassett received the Defense of Freedom medal by the authority of General Kenneth F. McKenzie Jr., commander of the US Marine Corps.

At WSU Pullman, Gassett volunteered at the community crisis center and as a mentor in the Whitman County juvenile probation office. He was presented with a Washington state volunteer award. After a bomb exploded in Streit-Perham Hall, where he was a resident advisor in 1979, he organized fundraising for WSU police to acquire more protective Kevlar vests. A Kevlar vest protected him as a DEA agent during a 1986 shoot-out with drug traffickers. In 2016, Gassett received the Alumni Achievement Award for his law enforcement career, volunteer work, and Cougar spirit.

BY ADRIANA JANOVICH

**DAN BIRDSELL** (’60 Ag.) has announced high school sports for 60 years, including 23 state tournaments and 11 state track meets. He started in 1962 at Endicott High School, where he announced basketball and football games, wrestling matches, track and field meets, and more. He spent the last 50 years announcing sports for Deer Park High School. Birdsell also announced WSU track and field events from 1996 to 2001.

**KAREN MOLENAAR TERRELL** (’78 Ed.) wrote two books in 2021: *Cosmic Connections: Sharing the Joy and Scrapbook of a Year and a Day: January 19, 2020 to January 20, 2021*. The books detail small moments of connection that create friendships and her life during the COVID-19 pandemic, respectively. Terrell is also the author of two books detailing her adventures with her centenarian father, the late mountaineer Dee Molenaar.

**SHERYL MCGINNIS** (’81 Home Econ., Teach. Cert.) retired as superintendent of Geraldine Public Schools in Montana after more than three decades in education. McGinnis taught in the clothing and textiles department at WSU while working on her master’s degree. She received advanced degrees in curriculum and instruction and education leadership after moving to Montana. She taught family and consumer science and middle school math in Fort Benton before becoming vice principal of the combined middle and high school there. **LOYD WALKER** (’81 Ag. Ed.) was awarded an honorary FFA degree after 39 years of teaching agriculture at Winlock High School. Walker retired in 2020 but continued to volunteer with FFA, coordinating career development events and advising students. He first joined FFA, formerly known as Future Farmers of America, as a high school student in the 1970s. Out of the 116 people who received the 2021 national award for exceptional service, he is the only one from Washington. **MIKE CONNELL** (’85 Busi.) is vice president for advancement and CEO of the WSU Foundation.

**RYAN CRIPE** (’99 Busi. Admin.) is chief financial officer for Sea & Shoreline, a Florida-based aquatic restoration firm.

**CHRISTINA TORRES GARCIA** (’03 MBA, ’09 PhD Ed.) is the director of the Latin American Studies program and assistant professor in the World Languages and Cultures Department at Central Washington University. **KATY BELOKONNY** (’05 Comm.) is a member of the board of directors at
Identity Clark County, a nonprofit group of business leaders working to improve the community. She holds a one-year honorary term in the Ed Lynch Seat, created in honor of a longstanding ICC chairman. The position honors one rising business star each year. Belokonny leads public affairs for PointNorth Consulting Inc. in Vancouver.

BEN MAHNKEY (’05 Psych.) is a Bothell city council member. He works as an employee relations investigations manager for Amazon’s worldwide operations organization and first got involved with the City of Bothell as chair of the civil service commission in 2014.

ROXANNE “ROXIE” TRUNNELL (’08 Psych.) and her horse, Dolton, earned two gold medals and one bronze in the 2020 Paralympic Games in Tokyo. She is the highest ranked para-dressage athlete in the world. ✭ MICHAEL KEYSER (’09 Busi.) is the chief executive officer for the National Renewables Cooperative Organization, a utility company based in Carmel, Indiana.

COREY RATHGEBER (’11 Comm.) stars in the third season of 90 Day Fiancé: The Other Way, a TLC reality TV show that follows Americans moving abroad to get married. Rathgeber married Ecuadorian Evelin Villegas off-screen in 2019, but the couple is filming their ceremony and reception for the show. ✭ CAMERON FREDERICK (’12 Spanish, Bioeng.) has entered residency at the University of Kansas School of Medicine’s Wesley Medical Center program. He completed medical school at Herbert Wertheim College of Medicine in Miami, Florida.

AUDREY MILLER (’12 Pub. Affairs, ’15 MPA) is the American Cancer Society Cancer Action Network’s 2021 Grassroots Professional of the Year for her cancer advocacy work in public policy. Her work with volunteers across Oregon helped pass a ballot measure to raise the state’s cigarette tax and implement the state’s first tax on e-cigarettes. Miller also led her volunteer team to triple Oregon’s fundraising goal for Lights of Hope, an event focused on honoring loved ones affected by cancer. ✭ TAYLOR (MORRIS) STEVENS (’12 MA Speech & Hearing Sci.) received a $1,000 grant from Four Peaks for Teachers, a charity that provides free school supplies to teachers. She is

Grade-schoolers doing online learning during the first year of the persisting COVID-19 pandemic got a boost from a Bernese mountain dog.

Frenzy, then a puppy, helped engage young students in the virtual classroom through YouTube, where Frenzy’s owner posted 35 videos from October 2020 to June 2021. STACY SLADE (’00 Busi., Mktg.) owns, trains, and breeds Bernese mountain dogs. She was already running the SitStay with Stacy Slade YouTube channel when her longtime friend, Seattle teacher Christine Lackie, approached her with the idea of a virtual class pet.

Lackie, who teaches second grade at Cedar Park Elementary School, came up with the idea in fall 2020—after teaching remotely since March of that year—in hopes of bringing joy to remote learning and helping boost student engagement.

“Students were so engaged—laughing and watching intently as Stacy answered questions, taught the ins and outs of pet ownership, and shared all the new things Frenzy was learning,” Lackie says. “What was really powerful is how Stacy connected the way Frenzy was learning to the new things they were learning, and that learning takes time, love, positive reinforcement, and lots of practice. It’s amazing that something as simple as a class pet—and a virtual one at that—can give students such a deep connection to their own journey as learners.”

Students in three classes at Cedar Park—and many others around the country—tracked Frenzy’s growth, watched new tricks, and learned about the pup’s time spent playing with sibling Hazy and other canine friends. Students also sent in questions that Slade answered the following week. And, once a month, students participated in live, online demonstrations with Slade and Frenzy.

“It was a special project that involved many people and brought so many together in a fun way during a very trying and hard time in our lives,” says Slade, noting Frenzy got to meet many students in person during an outdoor event in a park last September.

Videos from last school year run about 10 minutes and are still available on YouTube for any teacher to use. But, Slade says, “Since Frenzy is pretty much full grown, and students are back in class, we haven’t been making new videos.”

BY ADRIANA JANOVICH
When CAMERON LIMES (’21 Comm.) learned NBC Nightly News and Dateline NBC anchor Lester Holt would be coming to the 2020 Murrow Symposium to receive a lifetime achievement award, the then-junior began emailing the dean “like every week,” asking if he could get five minutes of Holt’s time. Limes had a show on Cable 8 and wanted Holt to be a guest. “I always saw NBC as a golden standard,” Limes says.

The symposium was canceled because of the COVID-19 pandemic, but Limes found another way to connect with his role model. The broadcast news major from Puyallup gave his résumé to his dad, a chief pilot at Alaska Airlines, who used to work with Holt’s now-retired brother. Limes’s dad asked Holt’s brother if he would forward his son’s résumé to Holt, who emailed the journalism student in early 2021 while Limes was attending class online. “I left class,” he says. “I couldn’t pay attention after I saw that.”

Their email exchange led to a video call and, in advance of the 2021 Murrow Symposium, Limes “started bugging the dean again.” He got to participate in a fireside chat with Holt. And, when Holt was on a reporting trip later last spring, Limes connected with him at Sea-Tac during the unveiling of Alaska’s “Our Commitment” plane, featuring the images of Black children, grandchildren, and mentees of airline employees—including Limes. There, a producer invited him on a shoot at KING 5, Seattle’s NBC affiliate, and helped him connect with a recruiter about an entry-level NBC job in New York City.

While visiting family back East, Holt gave the recent alum a tour of Rockefeller Center. Three months later, in October 2021, Limes started working remotely on NBC Nightly News as a desk assistant. He moved to Manhattan in December. “I didn’t expect to be here for probably 5 or 10 years,” he says. “The fact that I’m here is pretty amazing. I feel super blessed.”

Some day, Limes says, “I hope to see myself on screen, maybe in Lester Holt’s position. I’d love to anchor or write for SNL or The Tonight Show.” He also wants to mentor future Murrow grads, the way Holt helped him. “I would love to be able to make an impact on students down the line.”

BY ADRIANA JANOVICH

CONNOR WEISS (’20 Busi.) is proposal coordinator for Ahtna Engineering Services in Spokane Valley. ✤ CRISTALINA RAMIREZ (’21 Socio.) is an intern with the National Migrant and Seasonal Head Start Association in Washington, D.C. The nonprofit serves children of migrant and seasonal farmworkers. Ramirez was a participant in Washington’s Gaining Early Awareness and Readiness for Undergraduate Programs, which supports low-income students navigating high school and college. Her parents are migrant workers from Mexico. ✤ ANALIESE WENGER (’21 DVM) is a veterinarian at Mid-Columbia Veterinary Clinic in Goldendale.
IN memoriam


CHARLES G. PAULSEN (’62 Busi.), 79, October 14, 2017, Marion, Massachusetts.


SUSAN KELLEY MARKER (’64 Ed.), 79, November 6, 2021, Medina. DUANE LEE MARSHALL (’64, ’65 MA Ag. Econ.), 78, May 18, 2021, Colbert. PATRICIA D. POLINSKY (’64 Apparel Merch. Clothing
IN memoriam


MARSHALL W. IVEY (’01 Busi.), 43, July 6, 2021, Vancouver. SANDRA M. MCCOLLUM (’03 Socio.), 60, October 24, 2021, Albion. ZACHARY LOUIS
Pharmacy student scholarships make a difference.

Monica Sines, class of 2021, was the first recipient of the William and Felicia Gaskins Scholarship. Bill’s legacy lives on through his family, friends, the College of Pharmacy and Pharmaceutical Sciences, and the lives of the thousands of pharmacy students he mentored.

Learn how you can make a difference: pharmacy.wsu.edu/give

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8 a.m. to 5 p.m. Monday - Friday
The Lewis Alumni Centre has become such a familiar feature on the Washington State University Pullman campus that many would never guess that, up until the late twentieth century, it was a cattle barn. In the early 1980s, the barn had fallen into disrepair and was scheduled for demolition. By 1984, the idea to turn the barn into an alumni center became a reality, and focus shifted to raising funds for the extensive renovations.

The tile engraving program granted donors the distinction of having their names memorialized on one of the tiles that make up much of the Alumni Centre’s flooring. When the Alumni Centre formally opened on March 31, 1989, Cougs had purchased more than 5,800 tiles. The program continued to appeal to donors long after the initial goal for renovations was met.

Celebrated Cougs such as broadcaster Keith Jackson, space shuttle commander John Fabian, “Voice of the Cougs” Glenn Johnson, former US Ambassador to the Republic of Moldova Asif Chaudhry, and former WSU Regent Kate Webster all have their names etched on tiles.

Today, 7,333 engraved tiles grace the floors where cattle stalls once stood. The names on those tiles are physical reminders of the thousands of alumni who generously helped turn a dilapidated barn into a beautiful home away from home for all Cougs.

With only 267 blank tiles left, the chance to have your name engraved on a piece of WSU history is coming to a close. If you would like to include your name on the prestigious list of Cougs whose generosity helped build and sustain our proud Centre, please visit alumni.wsu.edu/tile or call 800-258-6978. You can also call to add a Cougar head to an existing tile.

Don’t miss out on your chance to make a permanent historical impact on WSU and the WSUAA; once all of the tiles are engraved, this opportunity won’t be available again.
FIGHT, FIGHT, FIGHT FOR WASHINGTON STATE! WIN THE VICTORY! WIN THE DAY FOR CRIMSON AND GRAY! BEST IN THE WEST, WE KNOW YOU’LL ALL DO YOUR BEST, SO ON, ON, ON, ON! FIGHT TO THE END! HONOR AND GLORY YOU MUST WIN! SO FIGHT, FIGHT, FIGHT FOR WASHINGTON STATE AND VICTORY! W/hyphen.caseA/hyphen.caseS/hyphen.caseH/hyphen.caseI/hyphen.caseN/hyphen.caseG/hyphen.caseT/hyphen.caseO/hyphen.caseN/hyphen.caseC/hyphen.caseO/hyphen.caseU/hyphen.caseG/hyphen.caseS! FIGHT, FIGHT, FIGHT FOR WASHINGTON STATE! WIN THE VICTORY! WIN THE DAY FOR CRIMSON AND GRAY! BEST IN THE WEST, WE KNOW YOU’LL ALL DO YOUR BEST, SO ON, ON, ON, ON! FIGHT TO THE END! HONOR AND GLORY YOU MUST WIN! SO FIGHT, FIGHT, FIGHT FOR WASHINGTON STATE AND VICTORY! W/hyphen.caseA/hyphen.caseS/hyphen.caseH/hyphen.caseI/hyphen.caseN/hyphen.caseG/hyphen.caseT/hyphen.caseO/hyphen.caseN/hyphen.caseC/hyphen.caseO/hyphen.caseU/hyphen.caseG/hyphen.caseS!
**Mighty tiny**

The lightest crawling robot ever developed weighs about as much as three grains of rice and earned its spot in the next Guinness Book of World Records.

Néstor O. Pérez-Arancibia at Washington State University was inspired by nature when he built Robeetle. The tiny machine is uniquely powered by the catalytic combustion of methanol and can climb slopes, navigate various surfaces, and haul objects up to 2.6 times its own weight. Robeetle weighs a mere 88 milligrams and was featured on the cover of *Science Robotics*.

Pérez-Arancibia, Flaherty Associate Professor in Engineering in the School of Mechanical and Materials Engineering, hopes his robots can someday be used to solve tricky engineering problems by emulating talented creatures like squid or mice that can seamlessly squeeze themselves like liquid into tight places. Biological organisms, particularly insects, still surpass their robotic counterparts in almost every aspect, but he hopes to develop robots in the next decade that are significantly better at mimicking natural systems.

He’s also excited to bring on new students to his program who like to tinker and have a good imagination.

"I hope they come knock on my door," he says. 😊
Every spring, the Cougar family comes together to recognize generosity, celebrate our successes, and give to the areas that mean the most to us.

HOW WILL YOU MAKE A DIFFERENCE FOR WSU?

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WASHINGTON STATE UNIVERSITY FOUNDATION