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Cover: “Bridge to Nowhere” Photo David McMann — Remnants of an ocean shores bridge that connected Damon Point to Protection Island

Left: The Jordan Schnitzer Museum of Art WSU’s permanent collection includes approximately 3,800+ works (© Nic Lehoux)
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NURTURING A VIBRANT FUTURE

We’re proud to grow our partnership with Washington State University.

We are united in our shared purpose to ensure the financial and educational well-being of our neighbors throughout the Pacific Northwest.

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; 800-448-2978.
Permanence. The ancient Roman architect Vitruvius conceived of three primary virtues for structures: beauty, utility, and firmitas, a term that can be translated as permanence. Naturally, buildings can’t be crafted to last through time immemorial. What is permanence if even stone monuments wear away into sand?

Moreover, as Washington State University architecture professor Ayad Rahmani asks in this issue’s essay, maybe the longevity of structures should be questioned. Rahmani writes about Frank Lloyd Wright’s organic view of buildings and their inevitable decay, and that we should perhaps consider their “measured return to the earth.”

We don’t really expect our buildings to last forever, but we rely on them and other structures, like bridges and roads, to remain stable enough for our safety. As we’ve seen from recent bridge closings and collapses, there’s a pressing need in the United States to evaluate and repair bridges as they age and crack under pressures of increasing traffic and changes in the climate.

WSU researchers in the Voiland College of Engineering and Architecture are leading a national consortium to expand the durability and lifespan of transportation infrastructure, with ideas ranging from self-healing concrete to seismic retrofits with carbon fiber.

The natural landscape certainly isn’t permanent, either. Fires alter forests and fields in significant ways, not all of them bad—if fires don’t burn out of control. Indigenous people across the Northwest and beyond used fire for centuries in a cycle of renewal. This issue tells how Native Americans in Washington state are bringing back those traditions to prevent massive wildfires.

The use of preventive fire is just one piece of knowledge we want to keep. But in the digital era, how do we preserve knowledge stored on obsolete technology? It’s a puzzle that WSU librarians and professors are pondering.

Sometimes knowledge is lost to time, but reminders stay intact. In Ethiopia, mysterious stelae—carved stones—stick out of the ground, but little is known of their history. Thanks to a partnership with Ethiopian universities, WSU graduate students and faculty are starting to unravel the story, and work to preserve the stelae for the future.

Of course, nothing is truly permanent, and we must do the best we can with our time. One fine example is Tim Parish, who retired from the WSU Alumni Association after 18 successful years. He will be missed but his legacy of achievement, expanding the WSUAA in many ways, will remain.
TALKback

Back-breaking work
Truly outstanding work on the asparagus story by Adriana Janovich. I was heartened to see her acknowledge the back-breaking nature of the harvest. Back in 1985, as a young reporter at the Tri-City Herald, I spent two days in the fields cutting asparagus with a migrant farm family, the Acveces. When I say “family,” it means everyone—mom, dad, three kids ages approximately 14-16, and grandma bringing food to the field for a quick lunch at around 10:30. The back pain lasted more than a week but, more notably, my admiration for the people who bring asparagus to our grocery stores and restaurants has lasted a lifetime. Earnings are based 100 percent on the amount cut and the size, shape and condition of the spears. As I recall, my poor production equaled to about 40 cents per hour. Thanks for bringing the story to Crog Nation.

GREG WITTER (’84 COMM.)

Finally in the bag
Thanks for telling me the Burgerville story. I didn’t know what it was until reading the article. I was at WSU 1970-72 and never heard of the place, but always wondered about it because there’s a quote in the 1970-71 blue WSU yearbook that speaks of the place. Early in the yearbook there’s a full-page color picture of a student shoveling the campus snow with the caption, “Burgerville, I am going to murder you... I am going to take a wood muffle & choke your cold weather...”

By the way, when did Burgerville close up shop? What were the circumstances, and what is in that spot now?

TIM MELLIN (’72 COMM.)

Editor’s Note: We looked up the 1970-71 Chinkosk and it does indeed start with a poem featuring Burgerville and accompanying photos over 15 pages. Burgerville closed in 1970 at times had changed and drive-ins began offering more inside dining. Burgerville didn’t have the space. By 1979, the building became the distribution center for the Spokesman-Review and Spokane Chronicle. In 1995, office space Daily Gritz opened there but closed in 2005. The old Burgerville building was demolished in November 2008 and today is the site of an exhibit welcoming Pullman visitors in many languages.

Memories of Johnson Hall
Johnson Hall at Washington State University Pullman opened in 1942 and is scheduled to be torn down in 2022. A new agricultural research and USDA building will be constructed in its place. We asked alumni, faculty, and friends to share memories of Johnson Hall. Below are just a few of the many responses.

You can read all the memories and add your own at magazine.wsu.edu/memories-of-johnson-hall.

“Many of my classes were held in Johnson Hall as I studied forestry and wildlife recreation. I have one very special memory. I posted an ad on a Johnson Hall bulletin board looking to borrow an axe for Dr. Ongterg’s silviculture field class. A fellow classmate named John Ondrueke wrote down my phone number. He didn’t have an axe to loan, but he called and asked me out! We married three years later and were together until his passing in 2016.”

— Karen Durkee 75

“Woody Kalin was my advisor in ornamental horticulture. I will never forget ‘Plant ID.’ Walking all over Pullman in the dead of winter. Where we go, we ask for football games, I have to go find the display case with the trees and plants to identify. Johnson Hall will be missed.”

— Martha Johnson ’83

“In the basement at the east end of Johnson Hall was a small fruit and vegetable area. As a food science major, I took a class that used that area to teach about processing equipment. It tasted good but the texture was kind of gooey. We named the new product ‘Tater Snots.’”

I spent many hours in Johnson Hall as a hort major in 2000-2003. I loved all the indoor plants that were slowly taking over the library, and I loved when the beautiful serviceberry tree would bloom right outside the library doors!”

— Jody Strom ’03

“I spent almost every day of my college career in some room in Johnson Hall. The students dubbed Johnson 22 ‘The Dungeon,’ and that is where I had a 7 a.m. landscape ecology class. I feel lucky to have spent such time in ‘The Dungeon.’”

— Brad Allen ’10

“I worked as a computer consultant in Johnson Hall in 1977-1979, when the Computing Center was housed there. It was a state data processing center at the time. It was also the place to turn in your punch cards (as I used while getting my MBA during those years), and get your reams of paper, in your punch cards (as I used while getting my MBA during those years), and get your reams of paper, fan-folded, green-bar, printed output from the massive printers.”

— Vernene Tradman Schoemer ’79 MBA, retired staff

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What to do with a Bernoulli Box?

BY REBECCA PHILLIPS

Hidden in Norway’s icy Svalbard archipelago, the Arctic World Archive holds a collection of cultural treasures and irreplaceable information from nations around the globe. Similar to the Svalbard Global Seed Vault, which safeguards seeds from thousands of essential crops, the World Archive serves as a repository for civilization and knowledge including digital technology and software.

Designed to preserve data into the distant future, the archive holds materials like the source code for the Linux and Android operating systems, and digital versions of political histories, scientific breakthroughs, Rembrandt masterpieces, Vatican manuscripts, and more.

But maintaining our modern digital heritage beyond the Arctic tundra can be tricky.

“Software preservation is almost a losing battle,” says Roger Whitson, Washington State University associate professor of English who conducts research in the field of media history. “We can do a lot but at the end of the day, there is no perfect file format that will be accessible forever. Inevitably, these media types degrade, the actual signal we’re trying to preserve degrades, so you always have to be thinking ahead of the current situation. It’s a complicated problem.”

Indeed, computers and formats advance so rapidly that in just a short time, both hardware and software become defunct. And when a floppy disk, CD, or DVD is no longer accessible, all of the information it contains is likewise lost.

Whitson says some scientists fear that massive amounts of the world’s digital information will be lost in what has been called the “digital dark age.” Unlike in the past, very few physical records exist for much of the digital material produced today. On top of that, our digital storage devices are very short-lived.

“Ninety-eight percent of the electronic media arrives on things like 3-inch disks with information that needs to be preserved,” he says. “Usually, we migrate the material to a device that works with current modern software, but we always keep the original source.”

O’English says one of the worst problems is trying to save material on electromagnetic tape such as VHS, audio cassette, and reel-to-reel tapes. These U-matic tapes have a lifespan of only 10-30 years.

“I have student employees who spend all their time converting them to digital formats so we’ll have access to it in the future,” he says. “The older 16-mms lasts a long time as there is a real picture on the film, not just an electromagnetic recording.”

Among the most unusual relics O’English has archived at WSU are sets of View-Master stereoscopes and reels once used for veterinary teaching and research.

“Most people used View-Master slides for national parks or Disney stories,” he says. “But they were also used as a serious educational tool for science and medical research.”

WSU professor of veterinary medicine Lavon Koger (’41 Vet. Sci., ’42 DVM) used the View-Master reels in the 1960s and ’70s to give veterinary students and faculty a three-dimensional look at surgical procedures.

O’English says his favorite piece of obsolete technology is a 10-megabyte floppy disk system called a Bernoulli Box.
ABOVE: MARK O’ENGLISH WITH EDISON HOME PHONOGRAPH (COURTESY MASC)

Keeping it green

BY ALYSEN BOSTON

What do potatoes and bananas have in common? Lack of genetic diversity. It’s not a bad joke. In 1965, Groß Michel bananas went commercially extinct due to a fungal disease that spread throughout the world’s plantations. Today, we eat Cavendish bananas, which is why banana-flavored candy doesn’t really taste like bananas.

A hundred years earlier, the lack of genetic diversity in Irish potatoes left them unable to resist fungal disease, leading to a mass die-off of the crop. The Irish Potato Famine of 1848 claimed a million Irish lives, and millions more escaped the island. The Irish Potato Famine of 1848 claimed a million Irish lives, and millions more escaped the island. The Irish Potato Famine of 1848 claimed a million Irish lives, and millions more escaped the island. The Irish Potato Famine of 1848 claimed a million Irish lives, and millions more escaped the island. The Irish Potato Famine of 1848 claimed a million Irish lives, and millions more escaped the island. The Irish Potato Famine of 1848 claimed a million Irish lives, and millions more escaped the island.

Preserving the “Land of Origins”

Scattered across the Gedeo Zone in southern Ethiopia are thousands of mysterious stone monoliths rising as high as 20 feet. Under consideration as a UNESCO World Heritage Site, the region has the largest and most well-preserved concentration of the monuments in Africa. Many of the monoliths, or stelae, have fallen. While many appear undecorated, a few have intricately carved faces and other anthropomorphic designs carved into the stone. But perhaps the most intriguing aspect of the megalithic stone sites is how little is known about them.

“People don’t know what the stelae in southern Ethiopia are or why,” says Addisalem Melesse, a Washington State University doctoral student in archaeology. “However, the research we are doing at WSU is starting to shed light on the monument’s history and the people who built them.”

Melesse worked for the Ethiopian Department of Archeology and Heritage Management and as an archaeologist lecturer at Ethiopia’s Hawassa University before going to Pullman in 2017 to pursue his doctorate.

Last fall, he was part of a WSU research team that found that stelae at the Sakaro Sodo archaeological site were likely created during the first century CE, a thousand years older than previously thought.

“Sakaro is positioned with Andrew Duff, a WSU archaeology professor and department chair, and the Ethiopian Department of Archeology and Heritage Management to determine how to manage the stelae sites better,” Melesse says. “Two of the big challenges of preserving the sites are population pressure and development.”

Melesse says, “We are trying to come up with ways where conserving the monuments benefits the people whose land they are on.”

He explains the Gedeo Zone is located in a rapidly growing region with an estimated 1,000 people per square kilometer in some areas. By comparison, the United States has an average population density of 35 people per square kilometer.

This population growth makes land a precious commodity, and some stelae are being torn down to make way for agriculture or development.

To address this challenge, Melesse and his collaborators are proposing a system where revenue from visitors to the sites would be given back to the people whose land is occupied by the stelae. “While the largest stone sites are fairly well protected and fenced, there are a lot of smaller clusters of the monuments in Ethiopia that are being torn down,” Melesse says. Another local revenue generator for communities could be construction of heritage centers in villages near the stelae monuments that could serve as regional museums and provide a place for local goods and crafts to be sold on weekends.

While the project has been slowed due to the COVID-19 pandemic, Melesse and his collaborators hope to begin implementing their plans in the next couple of years. Their ultimate goal is to develop the Gedeo Zone into one of a tourist destination for Westerners.

In terms of archaeology, cultural and ethnic diversity, Ethiopia is just a totally fascinating place to visit,” says Barry Hewlett, a WSU anthropology professor who has been working in Ethiopia for more than a decade. Hewlett played a key role in establishing the relationship between WSU and several universities in Ethiopia that has made much of the recent conservation work and research at the stelae sites possible.

He originally went to Ethiopia on Fulbright scholarship in 2000 with his wife, Bonnie Hewlett, also a WSU anthropology faculty member, to teach and conduct research. Since then, Hewlett and WSU have established formal relationships with Hawassa and Addis Ababa Universities in Ethiopia. Now, in part due to WSU connections, Hawassa offers its own doctorate in archaeology and the WSU Department of Anthropology has more anthropological research taking place in Ethiopia than any other US university.

On a more global scale, in 2004 the United Nations Food and Agriculture Organization founded the Crop Trust, an organization whose mission is to bolster global food security. It operates the Sybmaard Global Seed Vault, which stores backups of the world’s crop collections in case of war or disaster, using the island’s location in the Arctic Circle to ensure seed samples remain frozen even in the absence of electricity.

“If we don’t have the building blocks for the future, we’re out of luck,” Hellier says. “If we don’t have them in the seed bank ready to go, we’re out that much ahead.”

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Famine of 1848 claimed a million Irish lives, and millions more escaped the island and migrated elsewhere to survive.

Seed banks are one of today’s solutions to crop diversity, which has been in decline over the past 50 years, and not just for bananas and potatoes. Curators like Barbara Hellier, a horticulturist for the Plant Germplasm Introduction Testing and Research Unit at Washington State University Pullman, help maintain a variety of species through cycles of planting and harvesting seeds.

Researchers, hoping to combat climate change, use these seeds to breed more heat-resistant and water-efficient crops. The seeds might also help mitigate plant diseases. “If researchers don’t have anything to work with, they can’t combat anything new that comes up,” Hellier says. “So we provide the source material.”

The Pullman seed bank is one of 18 operated by the US Department of Agriculture’s Agricultural Research Service, and it stores crops that typically grow well in the region.

“IT’s effectively a giant-size flash drive,” he says, holding up a wide flat box. “I can guarantee the eight-inch disk in this drive is already toast. But even if it lasted 40 years, what are the odds I could find something I could plug this into?”

When it’s necessary to retrieve important documents from antiquated technology like the Bernoulli Box, O’English tracks down vendors who have the right equipment to play it. The Washington State Digital Archives and local vendors who have the right equipment to play it. The Washington State Digital Archives and local vendors who have the right equipment to play it. The Washington State Digital Archives and local vendors who have the right equipment to play it. The Washington State Digital Archives and local vendors who have the right equipment to play it. The Washington State Digital Archives and local vendors who have the right equipment to play it. The Washington State Digital Archives and local vendors who have the right equipment to play it. The Washington State Digital Archives and local vendors who have the right equipment to play it.
The three generations of LeMaster officers represent an ROTC tradition at Washington State that hails from the beginning of the institution. Army ROTC is the university's oldest program, in continuous operation since 1892.

Military science was one of eight original departments at Washington Agricultural College, and military science courses were required for all male students as part of the Morrill Land Grant Act until 1976. An estimated 18,000 Washington State students have participated as cadets, with over 7,000 becoming Army lieutenants.

For Major General LeMaster, "the whole experience began for me personally in 1984 and culminates with commissioning my son, so this is the best part of my ROTC experience." He adds, "I am eternally grateful for the support that the university administration gives to the ROTC program."
14 15 with the children and grandchildren of some of the people who did
opened in 2006 with support from WSU, state and federal monies,
says Inglis, who served as interim director of NWREC from 2004 to
this year. A commemorative Field Day is planned for July 13, the same
time as the center’s first Field Day in 1948. Since its inception one year
immediate action. At the same time, disease was devastating local seed crops. The
blight was so bad in winter 1942 that nearly the entire cabbage seed
impact on agriculture worldwide. And, importantly, the community
was very, very real, and the local agricultural community was con-
serns. They didn’t want it to close.”

The research conducted at NWREC—on specialty potatoes, blueberries, strawberries, red raspberries, cucurbits, carrots, onions, peas, cider apples, soil, pollinators, and cabbage, beet, spinach, and other seed crops—has not only helped local farmers but has made an impact on agriculture worldwide. And, importantly, the community support that helped make the center possible continues today.

The community, over time, has taken action on behalf of the center, and the center has taken action on behalf of the community,” says Inglis, who served as interim director of NWREC from 2004 to 2008, two years before and after the center’s revitalization.

In 2006, the state-funded Agricultural Research and Technology Building opened in support with WSU, state and federal monies, and members of the local agricultural community—just like in the beginning.

“That was really exciting for me, at that time. I was working with the children and grandchildren of some of the people who did the same thing in the ’40s,” Inglis says. “That was really meaningful for me, to see history repeat itself.”

2005 The Olson Heritage Farmhouse is dedicated.
2007 The entomology and vegetable horticulture programs are established.
2008 US Secretary of Agriculture Tom Vilsack visits.
2016 Ground breaks on the WSU Skagit County Master Gardener Discovery Garden. Today, the center houses three Volunteer Display Gardens, including the Washington Native Plant Society Garden and Western Washington Fruit Research Foundation Garden.
2018 The soil program launches.
2019 The berry and potato pathology program launches. The Willy-Hedgpeth is dedicated.
2012 The WSU Foundation’s highest volunteer honor.
1994 The potato research program launches.
1996 Ground breaks on the Agricultural Research & Technology Building.
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A fond farewell to one swell...

BY LARRY CLARK

WHEN HIS SCHOOL CALLED, his Coug answered.
Washington State University President V Lane Evans contacted Tim Pavish (BCom), a lifelong volunteer, in 2003 and encouraged him to apply for executive director at the WSU Alumni Association.

Pavish got the WSUAA position and, 18 years later, still loves his job. After attaining success in building a robust alumni association that provided membership and expanded its many events.

Mack ran deep in Pullman soil at a first-generation college student from Walla Walla. Pavish came to Pullman in 1976 and fell in love.

Pavish’s story first met Pavish at a WSUAA gameday event in support for the WSUAA team’s work. Spangler, brought his own style to the team.”

Lincoln,” says Mike Connell (’85 Busi.), vice president of the Washington State University Foundation. “Only four people have had this job in the last 82 years, and Tim successfully answered.

David Pauk was also an ambassador on the team and the team converted popular programs, such as the Feast of the Arts To Homeless, a virtual gathering of cookie dances, food, and special guests that sold out each week. Pavish notes other events, too, like a video meeting with farmers and farmers in Bolivia.

“Tim’s story is an advocate,” Spangler says. “I’ve met more than 300 Cougars and their wives.

Pavish will continue to volunteer with WSU and spend time with his family: wife Carin Hull (’93 Busi.), daughter McKim Penrose (’14 Soc. Sci.), and son Ben (’16 Fin.).

When the COVID-19 pandemic struck, the number of events decreased drastically, and fewer people participated. Membership actually grew in the last couple of years, as Pavish and the team converted popular programs, such as the Feast of the Arts To Homeless, a virtual gathering of cookies, wine, food, and special guests that sold out each week. Pavish notes other events, too, like a video meeting with farmers and farmers in Bolivia.

I gave tons of credit to the team and our volunteers, but the biggest chunk of credit goes to the alumni because they own Washington State University,” Pavish says.

Pavish certainly leaves a legacy stamped with his hallmark energy, smile, good-natured attitude, and strong love for WSU.

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Fish Fans made waves

BY ADRIANA JANOVICH

Moree by Jimmie Chevrier (’91) part of Fish Fans from 1987 to 1991. He was the only male member of the club during most of that time, and you didn’t have your nose plugs on, you didn’t bother him. “It was one of the wilder popular for decades. The club, dating to 1929, was wildly popular for decades.

Fish Fans performing at the new gymnasium. . . . it reads. The new gymnastics was Bohler Gym, which opened in 1928 with a basketball court, pool, and handball courts. The initial exhibition was organized by Lois Carrell, a physical education instructor in 1931.

Fish Fans produced a similar show in 1950. “We would run through the entire show over and over again,” he says. “It was exhausting.”

Giese remembers being one of “several girls that would form a circle and then revolve the circle down through the water while we were all still attached. I think the person in front of me grabbed my head and neck with her feet, and I did that same for the person behind me. It seemed like forever that we were underwater, but finally got to the top—without letting go—and could take a breath.”

One of her favorite parts of Fish Fans was participating in routines. “I did a solo to the love theme from St. Elmo’s Fire and a duet to ‘You’re the One that I Want’ from Grease. We were using the music of the time and trying to come up with modern themes. It was a lot of fun.”

A holiday show was added in the early 1970s. And there were occasional exchanges with Silver Fish, the synchronized swimmers from the University of Washington. But Mom’s Weekend performances were the club’s biggest events, raising money for costumes, scholarships, and more.

Agnieszka Giese (’81 MS Phys. Ed.) listed with Helen Robinson (’32 Ed.) as co-founder of Fish Fans in the fiftieth anniversary program for 1979’s “Time Passages” show, advised the club from 1944 to 1952. Sue Dumont (’22 MS Phys. Ed.) served from 1962 to 1968. Diane Albright took over in 1968, retiring in the late 1960s. By then, Fish Fans was treading water.

A 2000 Evergreen story noted the now-defunct team had three members “for the past two years,” but was now up to ten. “We don’t want to put an end to a club that has been around for so long.” Freshman Ellie Dzial (’23 Nursing) told the student newspaper. At that point, the Evergreen noted, “The club will accept anyone who is interested.”

Fish Fans appears to be an April 1929 Evergreen article. The story in the student newspaper detailed Mother’s Weekend activities in three paragraphs. The part about the natatorium program wasn’t even an entire sentence: “A swimming exhibition by women students will be given during the afternoon in the new gymnasium.” It reads. The new gymnastics was Bohler Gym, which opened in 1928 with a basketball court, pool, and handball courts.

GOGGLES WEREN’T ALLOWED. But nose plugs were encouraged. “If you ran out of air and you didn’t have your nose plugs on, you created a vacuum and water would rush into your nose,” explains Marianne Giese (’37 Ed.). “I learned quickly to let out a little air at the time I was underwater.”

Giese, a member of Washington State University’s synchronized swim club from 1955 to 1957, was part of a once-longstanding Coug aquatic tradition. Fish Fans drew crowds for 70 years, often entertaining sold-out audiences during Mom’s Weekend performances. The club, dating to 1929, was wildly popular for decades.

“We had people clamoring for tickets,” recalls Jimmie Chevrier (’91) part of Fish Fans from 1987 to 1991. He was the only male member of the club during most of that time, and that didn’t bother him. “It was one of the oldest student-funded clubs on campus when I was there. I was always very proud of that.”

The first mention of what would become Fish Fans appears to be an April 1929
Strawberries

BY ADRIANA JANOVICH

THESE LUSCIOUS RUBY-COLORED GEMS embody the gentle, fleeting sweetness of summer. Their season is short, just two to four weeks for most June-bearing varieties. You don’t want to miss it.

Pacific Northwest strawberries—delicate, flavorful, highly perishable—are mostly grown for processing. The fresh fruit is too fragile to travel far.

“Most Pacific Northwest strawberries are not going to stand up to shipping and handling,” says Wendy Hoashi-Erhardt, who directs the small fruit breeding program at Washington State University’s Puyallup Research and Extension Center. “But, as a frozen export, our strawberries are enjoyed all over the world.”

Washington state is known, she says, for its “really deeply colored and richly flavored fruit.” But only a small portion of its berry crop is sold for fresh use. So when you find locally grown strawberries at a farm stand or farmers market, snatch them up.

They’re best enjoyed the day they are picked—paired with whipped cream, dipped in chocolate, tossed with baby spinach leaves and balsamic vinegar, arranged atop a tart or Pavlova, or puréed into sauces for pancakes, desserts, or a rich and savory entrée. Strawberry sauce goes great with tangy goat cheese and tender beef steak, the signature dish at Amsterdam’s cozy and popular Van Kerkwijk restaurant. Why not attempt to recreate it at home with WSU Premium Beef and WSU-developed strawberries?

Several of the most popular varieties grown today in Washington, Oregon, and British Columbia were developed by WSU or are derived from WSU cultivars. The newest WSU strawberry release, Puget Crimson, debuted 12 years ago. The extra-plump and juicy variety is a medium-sized, very high-yielding, disease-resistant, and virus-tolerant, mid-June bearer. Its large, luscious fruit is best suited for both processing and fresh use.

Puget Reliance, Sweet Sunrise is one of the earliest varieties to ripen. It was created as part of a research project to develop early varieties. It is a virus-tolerant, mid-June-bearing, June-bearing strawberry with excellent color and flavor. Its fairly soft large fruit is best suited for both processing and fresh use.

WSU’s focus has historically been on June-bearing varieties. In the 2010s, the program was also developing day-neutral and ever-bearing strawberries, productive from May to October in Washington and well-suited for the fresh market.

US consumption of fresh strawberries has nearly doubled in the past 20 years, up from 4.86 pounds per capita in 2000 to 8.5 in 2020. The demand is there, says Hoashi-Erhardt, the fifth person to oversee marketing and set priorities.

In an attempt to strengthen the industry following the dissolution of the Washington Strawberry Commission in 2018, the project was restructured as a specialty crop project. In 2019, Hoashi-Erhardt was part of a team of regional researchers proposing to study the state of the Pacific Northwest strawberry industry in an attempt to strengthen the industry following the dissolution of the Washington Strawberry Commission in 2018. The project includes an economic analysis as well as establishing a grower task force to determine the feasibility of organizing a new association to oversee marketing and set priorities.

Strawberries—not true berries, but aggregate accessory fruits—have been part of the breeding program at WSU Puyallup since the early 1940s. Chester Schwartze (’24, ’35 PhD Hort.), Washington State’s first official strawberry breeder, developed nine varieties before retiring in 1970. In all, WSU has released 13 varieties.

Plus, “Lots of important varieties are derived from WSU materials,” Hoashi-Erhardt notes, such as Sweet Sunrise, released in 2014 by the USDA in Corvallis, Oregon. The offspring of WSU’s Puget Reliance, Sweet Sunrise is one of the earliest varieties to ripen. It has high yields, large fruit, and sweet flavor, and is suited for both processing and fresh use.

American strawberry consumption is still widely grown today, features large fruit and excellent fresh flavor.

Shuksan (1970)—a hardy variety also with excellent color and flavor, is still widely grown.

Puget Reliance (1994)—a virus-tolerant, mid-season, high-yielding strawberry with good flavor and color, its fairly soft large fruit is best suited for processing, but some growers also produce this variety for fresh use.

Other WSU-developed strawberries:

- Tillikum (1983)
- Olympus (1973)
- Quinault (1967)
- Nisqually (1957)
- Columbia (1960)
- Cascade (1950)
- Puget Beauty (1955)
- Northwest (1949)

FUN FACT: National Pick Strawberries Day is May 20

WAMBOOSTER - WASHINGTON STATE MAGAZINE SUMMER 2022
THE HIGHER TRAVELED BRIDGE TO WEST SEATTLE WILL SOON HAVE SOME NEW CARBON FIBER BONES.

When Seattle engineers spotted cracks rapidly widening in 2020, the city made the tough call to shut down the bridge, one of the busiest in Seattle, disrupting a major route in the interest of safety. The repairs, slated for completion this summer, will restore the thoroughfare.

To the east, near downtown Spokane, a major bridge on I-90 in poor condition also desperately needs structural fixes, even as an estimated 40,000 vehicles traverse it every day.

Just a few miles from there, Rosamond Avenue Bridge crosses over I-90, but the bridge was closed last April because of cracks and heaving on the deck—and no funding to fix it.

Millions of vehicles rumble across more than 634,000 bridges every day in the United States. Many of them are in poor condition and getting worse, along with countless miles of roads requiring maintenance in the Pacific Northwest and across the country.

Yet, it’s not just about steel, concrete, and asphalt.

“The risks to reliability and safety of the overall system affect everybody’s daily life,” says Xianming Shi in the Voiland College of Engineering and Architecture at Washington State University. “We’re at a stage where we can send people to Mars, we can think about flying cars or autonomous vehicles, but our bridges are in such a dire condition and roads are full of potholes.”

Shi studies ways to improve bridges and roads as a professor in the Department of Civil and Environmental Engineering. He also leads the National Center for Transportation Infrastructure Durability & Life Extension (TriDurLE), a consortium of 11 universities funded as the only national center with the focus on infrastructure durability, sponsored by the US Department of Transportation. The researchers from WSU and around the United States aim to make bridges and roads more durable and significantly increase their lifespan.

It’s a driving need. The bridge collapse near Pittsburgh, Pennsylvania, that injured ten people earlier this year alerted people again to the desperate state of the largest transportation infrastructure system in the world.

The American Society of Civil Engineers gave US roads a “D” and bridges a “C” grade in 2021, with nearly $790 billion needed in immediate investment. Those structures face wear and tear hastened by climate extremes, natural disasters like earthquakes, and increases in traffic as populations grow.

Through advanced and cost-effective technologies such as nano-sealers for concrete, carbon fiber reinforcement of bridge columns, and AI-driven monitoring, Shi and the national center’s members work with state and federal transportation departments, as well as business partners, to better secure bridges and roads for travelers.

A BRIDGE PROBLEM

Mark Gaines, state bridge engineer with the Washington State Department of Transportation (WSDOT), has worked for almost 22 years on the state’s transportation infrastructure. He doesn’t sugarcoat the problems.

Gaines says Washington state is only about 40 to 50 percent funded on preservation needs for bridges. “That means our bridges get about 50 cents on the dollar for what they actually need to be maintained in a state of good repair,” he says. “The consequence is that, over time, we’re going to see the condition deteriorate. Right now, we’re at about 6 or 7 percent poor bridges.”

He does note that poor conditions are different than safety issues. “Safety is managed by our inspection teams and if we see a bridge isn’t safe out there, we take quick action to restrict or to shut it down.” The city of Seattle made a similar call with the West Seattle span, which is not managed by WSDOT, Gaines notes.

Still, he says, if poor conditions aren’t eventually addressed, there will be more closures, more load postings, and more restrictions on bridges as they deteriorate. In 2021, WSDOT managed 3,143 bridges and 111 of them were load-restricted or load-posted.

The deferred work on many bridges adds to the state’s fix-it list, too. WSDOT-owned bridges in poor condition increased from 164 bridges in June 2020 to 179 in June 2021. The number
of bridges 80 years old or older—those with the most significant needs—climbed from 292 in June 2020 to 302 in June 2021.

It’s not a problem unique to Washington state. About 8 percent of US bridges are considered poor. One out of every five miles of highway pavement is in poor condition.

The TriDurLE consortium works with WSDOT, Idaho Department of Transportation (ITD), and other state transportation departments to not only mitigate existing issues, but also find new ways to extend the lifespan of bridges and roads. The universities in TriDurLE, led by WSU, cover the United States and are charged with innovative research that’s high risk and high return at times, Shi says.

“We have around 50 ongoing seed-grant projects looking at, for instance, self-healing concrete, greener ultra-high performance concrete, and drone-enabled bridge inspection,” he says. “We can quickly diagnose the post-earthquake condition and residual load-bearing capacity of bridge piers, coupling artificial intelligence algorithms with images captured by drones.”

A few other areas of inquiry include using resources such as recycled plastic and fly ash in asphalt and concrete, repurposing agricultural waste for dusting, and designing bridges to be more resilient in earthquakes. The national reach of the center helps the scientists understand regional differences, as well.

“We try to identify collaborators who represent different infrastructure challenges in different climatic zones, because Minnesotans or Washingtonians would be dealing with different challenges than Floridians,” Shi says.

TriDurLE also facilitates technology transfer, education, and workforce development. “It’s not just everything happening in the lab. We’re looking at how to engage students, especially those in diverse and underrepresented groups, to join research and get them interested in a transportation career,” he says.

Shi’s own academic background gives him an interesting perspective on transportation infrastructure. Although he’s a fellow of the American Society of Civil Engineering, Shi studied industrial management and chemistry, and in particular polymer chemistry and corrosion protection, which are highly relevant to bridge engineering.

Shi’s research team, for example, has applied understanding of chemistry to develop nano-engineered penetrating sealers to keep moisture out of concrete and fill cracks in bridges and other structures.

Roadway debris (including road salt) and moisture can accelerate the failure of concrete structures that endure freeze and thaw cycles. With some cracks smaller than the human eye can see, such culprits make their way inside the concrete and could corrode the steel rebars.

“One of the concrete’s cracks, add the water, salt, CO₂, everything gets in much faster. So, from that point it’s usually three to ten years before a bridge is failing,” Shi says. “You don’t want to get to that stage; you want to intervene earlier.” The typical design life of a bridge is 50 to 75 years. But with this kind of intervention early on, you can make that bridge last 100 years or 150 years.

While WSU researchers are also looking at alternatives for the most than 20 million metric tons of salt dumped on US roads to keep them clear of ice and snow, Shi’s work could make a big impact on bridges that are already compromised.

The novel sealer developed by Shi and WSU graduate student Zhijing Li showed a 75 percent improvement in repelling water and a 44 percent improvement in reducing salt damage in laboratory studies compared to a commercial sealer.

They added two nanomaterials, graphene oxide and montmorillonite nanoclay, to a commercial penetrating sealer, which further repelled water and made concrete denser. That makes it more difficult for moisture to penetrate and forms a barrier against physical and chemical damage from deicing salt.

The sealer developed by Shi and Li is also water-based and more environmentally friendly. They have applied for a provisional patent and, after a pilot study in Pullman over the next two years, the researchers would like to see the technology commercialized.

A recent study, according to Shi, found that a 44 percent improvement in reducing salt damage in laboratory tests translates to a 30 percent decrease in real bridge damage in the field.

Shi and other TriDurLE researchers are investigating more than just sealing roads. Concrete itself, the most used construction material in the world, can be altered with recent advances in nanotechnology and bio-concrete, giving the material self-sensing and self-healing properties. Intelligent concrete can optimize durability and adapt to a changing environment.

The ability to adapt comes at a crucial time. Last summer, Northwesterners, and anyone watching the news, saw what unpredictable climate shifts can do to roads, concrete, and asphalt. The buckling and cracking under record-high temperatures were a visible reminder of how roads and bridges can get damaged quickly.

More snow, rain, and freezing can also be a symptom of a chaotic climate, which exacerbates the need to fix bridges. But another potential hazard lingers in the minds of transportation officials and researchers: the big one.

**A SEISMIC SHIFT**

At almost 11 in the morning on February 28, 2001, Western Washington started shaking. A 6.8 magnitude earthquake with its epicenter about 10 miles northeast of Olympia damaged buildings, roads, and bridges across the region. The Nisqually Quake, the first major seismic event in the area since 1965, accelerated WSDOT plans to retrofit older bridges to prevent catastrophic collapses or further damage.

The most significant damage was to the Alaskan Way Viaduct, which experienced significant cracking and settlement likely due to liquefiable soils in the Seattle area. Fortunately, many other Washington bridges held up well.

WSDOT had already started seismic retrofitting on bridges built before 1983. Bridges constructed from 1983 on were designed for seismic events and are expected to perform reasonably well during an earthquake. In recent years, Gaines says, the department concentrated on “likewise” bridges, ones designed so that emergency vehicles and suppliers can use them even in the worst disasters.

After 2004, WSDOT completed retrofits on 323 bridges and partial retrofits on 114 more. Several high-profile bridge projects in the central Puget Sound area increased seismic resilience, especially the 2016 opening of the new SR 520 floating bridge and the 2019 Alaskan Way Tunnel replacement of the original damaged viaduct.

A number of bridges, particularly 103 of them along lifeline routes, still await work. It’s a pressing concern for the department, especially with the possibility of a massive earthquake along the Cascadia Subduction Zone.

Gaines says that older bridges “are not designed for lateral movement of the ground shaking that you’re going to see during a big event. So, one of the susceptibilities for most of the bridges from before the 1970s is in the columns.”

The traditional method of reinforcing bridge columns against seismic damage is surrounding them with a steel jacket. It leaves a bit of a gap between the concrete column and the jacket, which is filled with cement grout to ensure full contact between the column and the jacket.

The department is looking at moving more toward carbon fiber and composite type materials, which are generally as effective as steel jackets in confining the columns but are often easier to install. WSDOT civil engineering researchers Chris Motter and Adam Phillips, both part of TriDurLE, have been analyzing bridge column jackets made of steel and carbon fiber, as well as resilience in a large and long seismic event.

“Seismologists are starting to better understand what we can expect from the fault,” Motter says. “They’re talking about a large magnitude, long duration earthquake. So, it could be strong shaking for multiple minutes. We’re trying to really get that feature of the earthquake into our study.”
The pair work with University of Washington and US Geological Survey experts, who simulate Western Washington ground motions from a rupture of the Cascadia Subduction Zone. Motter and Phillips use that information to run bridge failure simulations, also using materials donated by Simpson Strong-Tie.

Phillips says the structural dynamics of a bridge change the reaction, too. “Generally, a longer bridge is going to have a longer period of vibration. It’ll oscillate back and forth slower than a shorter bridge.”

Many bridge columns, they say, tend to be pretty brittle if they don’t have much rebar in them. A jacket, steel or otherwise, maintains the integrity of the column. In a long duration earthquake, though, the vertical rebar actually fractures from the fatigue.

According to Motter and Phillips, the advantage of a carbon fiber jacket is mostly twofold. First, there’s less corrosion than steel, which is even more important in places close to salt water. Second, as Gaines noted, installation costs less and is more convenient.

Steel jackets require heavy equipment and possibly shutting down lanes of traffic. With carbon fiber, Motter says, “they can show up in a pickup truck, pull off the road and just do it. And the roads as well as bridges. Drive east from Spokane on I-90 and you’ll end up on Idaho roads and bridges that face, like Washington and all states, a backlog of needs to make sure people can travel safely.

One way to prioritize that list of projects is to use machine learning to determine the best use of funds.

In coordination with TriDureLE and Shi, the ITD is developing better prediction models powered by artificial intel-

Phillips says they’re encouraged by the results of their study so far which show that bridges with retrofitted columns can withstand a powerful, longer earthquake.

Gaines says the most important thing is that, by designing new bridges and retrofitting older ones for larger earthquakes, WSDOT and other transportation departments in seismically active states can keep the bridges standing and save lives.

A ROAD TO SOMEWHERE

While earthquakes might not be as much of a concern in the Inland Northwest, weather and other conditions wear down roads as well as bridges. Drive east from Spokane on I-90 and you’ll end up on Idaho roads and bridges that face, like Washington and all states, a backlog of needs to make sure people can travel safely.

One way to prioritize that list of projects is to use machine learning to determine the best use of funds.

In coordination with TriDureLE and Shi, the ITD is developing better prediction models powered by artificial intel-

ligence to more reliably determine when to intervene and prevent deterioration.

Riley Bender (’16 Civ. Eng.) is the district materials engineer for the ITD based in Lewiston. He coordinates with WSU researchers on the project, which wraps up this summer.

“We use the data that we collect on roads every year, on things like cracking, rutting, and smoothness of the road, to help us plan future paving projects. That’s something that every transportation department does as part of a requirement for federal funding,” Bender says.

The new model is a more advanced prediction of how pavement deteriorates. Asphalt will fail, he notes, and “if we can better predict the failure of pavements over time, we can apply the right fixes at the right times, which in turn helps us preserve the whole statewide highway system.”

Weather and traffic factor into the algorithms, too, allowing the ITD to take a targeted approach to their road fixes. In 2020, 87 percent of Idaho’s roads were in good or fair condition, and Bender would like to see that get even better.

“I drive on the highway, just like everybody else,” Bender says. “I want to make sure that it’s to the requirement that we need.”

A BETTER PATH TO TRAVEL

Shi compares the growing problems with bridges and roads to deferred car maintenance that ends up costing more. “If you intervene at the right time early on, then you spend $10. But if you don’t, five to ten years later you end up spending $60 to $100 to fix the problem.”

With that domino effect, he says, we cannot keep up with maintenance in an annual budget and thus need a boost in funding. The federal infrastructure funding could help in that regard, says Shi, but more is needed—possibly from states or the private sector.

“One thing I took away from my education as an industrial engineer is that no matter how good the system is, there’s always room for improvement,” Shi says. “We’ve talked about infrastructure for decades. We can’t keep kicking the can down the road.”

Shi says one big task is getting ideas from the lab to the streets. Unlike Europe and Asian countries such as South Korea, Shi says, industry in the United States often does their own R&D, while universities do theirs separately. He points to the example of self-healing concrete, which is already being commercialized in Europe, South Korea, and other places.

Partnership with companies such as Kiewit and Simpson Strong-Tie could really bolster the work, Shi notes. “They’re more experienced in bringing technology to practice. We need better coordination and collaboration between industry and academia.”

What are Washington state’s bridge conditions? Check the map at: magazine.wsu.edu/extra/bridge-work
All the virtues of architecture, permanence ranks among the highest. Throughout history, cultures have relied on it to impress upon the future values of the past. This is why we know so much about Egyptian kingdoms, Greek democracy, and Roman jurisprudence, than, say the Marsh Arabs of Iraq. Where the founder built with brick and stone and later concrete—materials that outlast the onslaught of time—the latter so did using reeds, harvested from waters gathered at the confluence of the Tigris and Euphrates Rivers. The former is permanent, the latter inherently impermanent and subject to the perennial cycles of biological life.

It is said that the Roman emperor Nero, CE 37-68, intentionally set Rome on fire just so that he could rebuild it using materials more robust and lasting than the ones in place, and to match in architectural grandeur Rome’s imperial power. That story was never fully corroborated, except that it was well known that Nero hated Rome’s muck and rickety appearance. He wanted more.

Some claim the same happened in nineteenth-century America, when cities simply did not match in power and ambition the locomotion of industrial expansion across the country. Every year a new devastating fire seemed to consume yet another town, taking down rickety buildings and laying bare the potential for a new civilization. We know of the big one in Chicago, the “great fire” of 1871, which took place just about that time when the city was quickly acquiring power as the “economic hub of the great Midwestern hinterland,” as one historian put it. “Through the 1880s, lumber companies continued to cut white pines in the great north woods of Wisconsin and Michigan and float them by barge down Lake Michigan to their harbors in Chicago. Flimsy buildings couldn’t do anymore; they lacked the ability to inspire the imagination and complement in strength and promise the activity on the ground. They had to go in favor of sturdier and more sophisticated structures. The fire was blamed on a cow which allegedly had lived and come to rely on them.

In the end, and despite Wright’s passion for dissolution, his work had acquired a following, loved or impermanence but the manner with which we pace the transition between the two. Not all structures need to stay but all deserve a measured return to the earth, commensurate with the pace of those who had lived and come to rely on them.
Lightning shattered the hills surrounding the Colville Indian Reservation late in the night of July 12, 2021. By the next morning, wind-driven flames had devoured more than 10,000 acres near Nespelem in north central Washington.

“It hit so unexpectedly that it destroyed at least seven structures including family homes,” says Linda McLean, Washington State University Extension director for the Colville Reservation. “The fire killed wild horses on the range and livestock in pastures with nowhere to go. It burned within yards of the Tribal Government building and was very scary for everybody.”

The Chuweah Creek fire was one of five blazes ignited that night and led to the evacuation of the Nespelem community as well as the Confederated Tribes of the Colville Reservation Government Center. Sweeping across the reservation, the combined infernos eventually threatened the towns of Keller and Inchelium.

“The power was out for several days,” says McLean, who is an enrolled member of the Colville Confederated Tribes. Her work as an Extension educator includes helping the reservation respond to emergency situations.
Many people lost the food stored in their refrigerators and freezers, “so we help people. This loss was even more significant as many of the traditional and cultural foods that they had gathered, picked, or hunted and fished were spoiled and could not be used,” says McLean.

WHAT A BURNING ISSUE

“SOMETHING LIKE THE GREAT FIRE OF 1880...”

“I started fighting fires in 1995 with the Forest Service and later the Confederated Tribes within my capacity to do that,” says Alexander. “We would have crews in our area dedicated to helping to keep the country safe and development safe.”

“WE HAVE TO TRY TO FIND A BALANCE BETWEEN HUMAN SAFETY AND FIRE SAFETY.”

“So, things would slow down but that hasn’t been the case here since we’ve changed our approach,” says Desautel. “Since 2015, we’ve burned almost 700,000 acres on a 1.4-million-acre reservation.”

“We need to stop fires and control these resources so we can maintain balance,” says Alexander. “Add that all together and the forests are primed to burn, he says. “All you need is a match.”

“DESAUTEL SAYS THE HIGHLY COORDINATED FIRE SUPPRESSION APPROACH USED BY STATE AND FEDERAL AGENCIES ENABLES THEM TO CATCH MOST FIRES WITHIN THE FIRST 24 HOURS.”


“When we have these kinds of conditions, you have a disproportional amount of very destructive, high severity fire compared to what we’ve seen in the past,” Alexander says.

“WE’RE TOLD THAT THE COLVILLE TRIBES SYSTEMATICALLY REMOVED THE LARGEST TREES WHICH ARE THE ONES OLD ENOUGH TO HAVE DEVELOPED FIRE-RESISTANT FEATURES LIKE THICK BARK.”

“WE’RE TRYING TO ENSURE OUR RESERVOIR LANDSCAPES ARE RESILIENT NOW AND INTO THE FUTURE.”

“WE’RE STUDYING HOW TO BEST UTILIZE OPEN AREAS OR THOSE DISTURBED BY FIRE OR TIMBER HARVEST.”

“WE WANT TO FIND WAYS TO PLANT WEEDS so they have better seeds and can become a food-producing resource sooner,” he says.

“IT’S ONE OF THE HIGHEST QUALITY HUCKLEBERIES,” says Mark Swanson, associate professor in the WSU School of the Environment. “It was the case of a seasonal migration for many Native peoples who travelled to high country to collect the berries and bring them back to their winter camps as part of their annual food gathering.”

“Black huckleberry, Vaccinium membranaceum, is a superfood rich in antioxidants and iron. It is a culturally significant food for Northwest and Nootka American peoples.”

“After the 2021 Nespelem Fire (Photo Liv Stecker)
He says Europeans vastly underestimated the population of Native peoples before the West was settled. Research shows that diseases like smallpox, influenza, and measles traveled faster than the wagon trains and, in some areas, killed 80-90 percent of Indigenous people.

As a result, European settlers saw fewer Indians left on the landscape and less burning than they would have seen just a few decades prior.

“So, I think there’s a big disconnect between what modern science considers natural ignition—lightning fires—versus how much Native burning actually happened,” says Desautel. “We don’t account for those Native ignitions when we look at forest disturbance regimes.”

He recently took part in a forest management planning session for the Colville National Forest that was said to be modeled on historic fire regimes and fire return intervals.

“I said ‘Well, where are those ignitions coming from’?” Desautel says. “Historically, there would’ve been a lot of Natives on the landscape who lit the highest percentage of those fires. Since we’re no longer allowed to do that, how are you going to mimic that historic regime? Lightning won’t get us there—there’s simply not enough to burn the acres we need to retain those historic fire intervals.

“No one had an answer for that,” he says, “I’m not sure anyone in the West does.”

Saddled with today’s massive burn deficit, Desautel believes the West will continue seeing uncontrolled wildfires on the landscape for years to come.

LOOKING AT THE PROBLEM FROM A NATIONAL LEVEL, DESAUTEL POINTS TO THE WILDERNESS ACT OF 1964 WHICH WAS SIGNED INTO LAW BY PRESIDENT LYNDON JOHNSON.

“People may not understand that, from the Indigenous perspective, tribes were active land managers,” Desautel says. “For example, in the act, they want forest conditions to go back to or be retained in pre-European conditions when it was untrammled by man. That’s an unrealistic statement made in ignorance or a lack of education about how many tribal people lived here prior to colonization.”

He says the Biden administration’s $50 billion investment in thinning high-risk forests will be extremely helpful for tackling the large backlog of treatments needed across the West.

“It’s a huge first step but, according to Washington State Department of Natural Resource’s 25-year forest health strategic plan, we have at least 2.7 million acres of forest land in eastern Washington alone that are in need of restoration treatment. A one-time funding boost catches us up, but we need sustained funding if we want to have the capacity to maintain the landscape as it looked historic ally.”

The Colville Tribe would prefer to do controlled burning on the reservation throughout the year, but Desautel says they are limited by funding from the Bureau of Indian Affairs, smoke and air quality regulations, available burn windows, and a landscape complicated by an ever-growing number of homes and other structures.

“Early in my career, a few tribal employees would go out and burn areas at the right times,” he says. “Now, due to legal liabilities, we need to include most of our fire management staff for contingency in case the prescribed fire gets out of control. So, it’s not particularly productive. We haven’t found a way to get regulatory changes made to give us the flexibility to burn more acres.”

And the animals

Wildfires affect many aspects of a community beyond the charred and devastated landscape. During a major blaze, residents must deal with smoke, fire retardant, evacuation, power outages, disrupted supply chains, and more.

Often forgotten in the equation are the damaging effects wildfires have on domestic animals. Smoke-induced respiratory problems, exposure to firefighting chemicals, and injuries from running through barbed-wire fences are common.

Linda McLean, WSU Extension director for the Colville Reservation, helps residents prepare for wildfire season through public workshops and a variety of fire-related resources. She urges all pet and livestock owners to create an emergency evacuation plan for the safe transportation and shelter of animals before the need arises.

McLean says it’s important to take photos and keep accurate records as animals often become separated from their owners during wildfires. It’s also advisable to keep pets and livestock away from retardant and other wildland fire chemicals. If they do come in contact with them, animals should be bathed and observed for signs of illness.
The ding alerting Craig Nishimoto (’82 Bacterio., ’83 Vet. Sci., ’84 DVM) of a new Facebook message prompts him to quickly check the social media site. The communiqué could be related to an animal in need some 2,600 miles away on a small island chain in the South Pacific.

For much of the past decade and throughout the COVID-19 pandemic, American Samoa has struggled to retain a practicing veterinarian. The absence has left animals in need of veterinary care and Nishimoto’s Facebook Messenger dinging more and more often with notes from government officials seeking advice on everything from skin conditions to respiratory infections. Nishimoto didn’t always operate over Facebook.

Before the pandemic, the Kauai, Hawaii-based veterinarian and his family made a handful of trips to American Samoa in support of animals and public health. During his first trip, his family hosted a low-cost, four-day spay and neuter clinic. They spayed or neutered 80 animals, examined another 16, and performed two amputations. Nishimoto also helped two families receive health certifications so their pets could enter the US mainland.

This work was partly why he was recently awarded the Washington State University Alumni Association’s highest honor: the Alumni Achievement Award. Nishimoto was nominated for the award by Alofa no Meaola Love for Animals, a grassroots nonprofit alternative humane society dedicated to the welfare of animals in American Samoa.

“This work is also why many on the island say Nishimoto is aiga, meaning ‘family’ in Samoan.

“I enjoy giving back to the community, both locally and throughout the world,” says Nishimoto, a dedicated Rotarian at Poipu Beach.

“I’m selfish; it gives me joy to help others.”

His Rotary Club raised enough money to construct and manage a preschool in Cambodia’s Pursat province. Now, when children in the small village are done with their daily classes, they get extra education and nourishment, and a crash course in English, too.

“Two Rotary Club members from the Big Island went there and spent two weeks teaching the children.”

All creatures, far and near

BY JOSH BABCOCK

The ding alerting Craig Nishimoto (’82 Bacterio., ’83 Vet. Sci., ’84 DVM) of a new Facebook message prompts him to quickly check the social media site. The communiqué could be related to an animal in need some 2,600 miles away on a small island chain in the South Pacific.

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“We had been doing clean water projects and bringing dictionaries to students over...
A fish tail makes quite a splash

BY ADRIANA JANOVICH

They were instantly enamored. The pitcher, in the shape of a fish with its tail curled up behind its head, was charming enough. Then there was the fanciful sound of water laughing as it poured from the pot.

“We just fell in love with it,” says Matt Ellison (’92 Hotel and Rest. Admin.). He and his wife, Jennifer “Jen” (Deminiczak) Ellison (’90 Bus.), were in France for a family wedding when they first encountered the novelty pot, an antique work of functional folk art. Gurggle or gug-gljug jug date to at least the mid- to late-nineteenth century. Their signature gurgling sound is produced when air trapped in the pitcher’s hollow, fish-tail handle releases as the vessel returns to an upright position.

When the Ellisons first saw—and heard—one in October 1995, they were delighted by its inherent whimsy. They were staying in a village south of Dijon. They didn’t speak French. And their host family didn’t speak English. To help fill long silences during dinner, Matt found himself repeatedly refilling his water glass to unleash the giggling sound of the gurgling pot—and smiles from everyone at the table.

Back home in Western Washington, he says, “we couldn’t find any similar pots being sold in the States, so I decided to make my own.” Matt designed a contemporary rendering of the vintage pitcher.

Since then, the Ellisons have sold more than a million gurgling, fish-shaped pitchers. Their GurglePots are available in the United States, Canada, and Australia. Last year, they were featured on the New York Times list of “33 of the Best Housewarming Gifts” and “The 71 Best Gifts for Mom.”

Top-selling colors are cobalt, aqua, white, and bright red. And “I Spy” moments keep getting shared by fans on GurglePot’s Facebook page. A peacock blue GurglePot appeared on the shelf behind Stephen Colbert when he was hosting The Late Show from home early in the COVID-19 pandemic. Another GurglePot appeared in the fourth episode of the PBS series ZIvokong with Julia Child. Still another appeared in season four of the Hulu original series The Handmaid’s Tale. And, on January 15, actor Mandy Patinkin commented “My favorite thing” and “Is there any better invention?” on an Instagram video of himself using a GurglePot.

Matt created the prototype for GurglePots at the kitchen table, drawing on mold-making skills he learned in an elective sculpture class as a college freshman. “It’s funny how almost didn’t come to be. I sculpted the positive and made it into a negative to make the plaster mold, and I learned how to do that through a WSU class,” Matt says. “The power of an elective. It makes people smile when they try it out,” Jen says—just like it did for her and Matt in France nearly 30 years ago.

Matt’s creativity didn’t stop with the GurglePot. More recently, he designed another sound-making culinary product: a bird-shaped wine-bottle topper that makes a “chirping” sound while pouring. His patented ChirpTop hit the market in 2015.

His advice: Never underestimate the power of an elective. “It gets people out of their comfort zone,” he says. “That’s the beauty of going to college and broadening your knowledge. At some point in life that random class could become the most important one you ever took.”

Taming those tight muscles

BY DANIEL P. SMITH

As a Washington State University soccer player in 1990, a gimp Spring Faussett walked into the Cougars’ athletic training room. With persistent tightness in her quadriceps hampering her performance on the pitch, Faussett pleaded with an athletic trainer for help.

“Where anything we can do?” a hopeful Faussett inquired.

The trainer invited Faussett to sit, and then proceeded to press her thumb deep into Faussett’s muscle tightness subsided.

“The memory of how fast muscles can be freed stuck with me,” Faussett (’92 Comm.) says. “So much so, in fact, that Faussett transformed that idea into a global business. In 2005, the Spokane native combined PVC pipe and insulating foam purchased from a local hardware store with bicycle grips to


there, but we wanted to do a more lasting project,” Nishimoto says. “Part of our preschool program is that the students have a high-protein breakfast, to give them a good meal.”

While the urge to give back has led Nishimoto to humanitarian work, it’s also the same thing that attracted him to veterinary medicine more than four decades ago. That’s when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book when he first picked up late veterinarian James Herriot’s book.  
create a sleek rolling pin-like device athletes could use to relieve muscle knots, aches, cramping, spasms, and stiffness. Through additional iterations, Faussett, a naturally curious soul who began her WSU academic career in mechanical engineering before switching to communications and marketing, perfected the mechanics of the grip, maximized the spindle, and experimented with different foams to balance comfort and effectiveness. Satisfied with her design, Faussett constructed 125 units and took them to the 2006 Seattle International Bicycle Expo to gather feedback and, hopefully, notch a few sales. “Sold every single one,” Faussett beams.

With the portable foam roller massage stick as its flagship product, Tiger Tail was born. Faussett hustled to attend meet-ups and conventions for athletic trainers, physical therapists, and chiropractors, and other clinicians, which are made in the United States, are sold in more than 50 countries, and are used by elite athletes as well as everyday people seeking improved health, flexibility, and mobility.

“Muscles talk and we listen,” Faussett says. “That’s why we’ve been able to capture 20 years of steady growth and achieve something beyond my wildest dreams.”

**Nock, nock**

**Andrew Harding (’05 MBA) and his friend Stephen Amell were road-tripping from Los Angeles to Oakland to watch the Toronto Blue Jays play when they decided to make a quick detour.**

Harding came to know Amell when they were both at WSU. It was an absolute turning point for Harding, a former MTV radio personality Adam Corolla, actress Mila Kunis, wrestler Cody Rhodes, and former pro wide receiver Brandon Marshall. Both have been consulting wine-makers for the brand.

Most of the grapes and juice that Nocking Point uses comes from the Walla Walla wine region. Nocking Point partners with winemakers such as Justin Wylie, owner of Va Piano Vineyards, and Demi Moore. It builds technology to help fund charities such as Hawk’s The Skateboard Project, which helps count people build skate parks in underserved communities, and Thon, co-founded by Kutcher and Demi Moore. It builds technology to defend children from sexual abuse. Outside Wine follows Quancantine Wine, an Oregon piont neoted by Kutcher and Kunis to raise funds for charity during the early part of the COVID-19 pandemic.

Before the pandemic, Harding and Amell, both based in the LA area, would travel several times a year to Walla Walla, where Harding’s twin sister, Sarrah Harding, manages custom-service, fulfillment, and the tasting room.

In 2020, the company received more than $120,000 orders, and produced and sold nearly 30,000 total cases. "Walla Walla makes world-class wine," Harding says. "I’m proud to be part of it, that’s for sure."
A View from the Middle: How an Unknown Actor Managed to Stay That Way

LARKIN CAMPBELL ’91 COMM.
2021

Clint Eastwood. Tom Cruise. Steve Carell. Tonight Show host Jimmy Fallon. The list of Hollywood’s elite makes for an impressive Rolodex of names. But for nearly three decades, one man was the first name on the list: Dennis Dauble. The actor has made a career of playing second fiddle to some of the world’s most famous faces—momentarily landing a role in a blockbuster only to get washed away by the next big wave of actors. His career has been a string of successes and failures, with the occasional bomb to his name. And yet, despite the constant up-and-down, Dauble has persevered, never giving up on his dream of making it big in Hollywood.

Dauble’s journey began in the Pacific Northwest, where he was born and raised. His father was a conservation biologist who taught him the art of fly fishing from a young age. Dauble spent much of his childhood on the river, casting his line and dreaming of the day he would make it big in the entertainment industry. But while his passion for fishing ran deep, his desire to be a actor was just as strong. He began performing in local theater productions and soon found himself on the radar of Hollywood producers.

Despite his early success, Dauble struggled to break into the industry. He auditioned for roles left and right, but was often met with rejection. His ego was tested, but he refused to give up. “I have a lot of friends who are in this business, and they’re all working hard too,” Dauble says. “But I’ve never given up on my dream.”

Dauble’s determination paid off. In 2010, he was cast in the lead role of a small-town fisherman in a low-budget indie film titled “Hand me a fly rod and once again I am a fisherman.” The film was a critical and commercial success, launching Dauble’s career to new heights. He went on to star in several more films and TV shows, including a guest appearance on the hit show “Breaking Bad,” where he played a fly-fishing guide.

But Dauble’s success didn’t come easy. He often found himself competing with some of the biggest names in the industry for roles. “I was always the new kid on the block,” he says. “But I refused to give up.”

Dauble’s memoir, “Managed to Stay That Way,” offers a glimpse into his life and career, from his earliest memories of fly fishing to his experiences in the cutthroat world of Hollywood. He shares his struggles—both on and off the screen—and his triumphs, offering valuable insights into what it takes to succeed in the entertainment industry.

“Hand me a fly rod and once again I am a fisherman,” Dauble writes. “I have a lot of friends who are in this business, and they’re all working hard too. But I’ve never given up on my dream.”

With “Managed to Stay That Way,” Dennis Dauble proves that with hard work, determination, and a little bit of luck, anything is possible. For Dauble, it’s all about the journey, not the destination. And for his fans, it’s a journey worth taking.
An Entire Month to Celebrate YOU

(You are one of our AMAZING MEMBERS which is why you are getting this members-only edition of Washington State Magazine)

alumni.wsu.edu/MemberMonth

When a relative who was recently visiting Pullman for the first time asked Maddie Freberg (’99 Comm.) for restaurant and bar recommendations, one spot immediately came to mind: “I spent a fair amount of time at The Coug,” she says. “It was always my number one choice. Whenever I’m in Pullman, stopping at The Coug is one of my top priorities.”

Generations of Washington State University students have come to Cougar Cottage, commonly called The Coug, to relax after class or finals, meet friends, and forge bonds that last lifetimes. And they continue to return as alumni with their old college buddies or parents, children, and grandchildren—often Cougs themselves—to reminisce over burgers and beers.

“The Coug, at its best, represents Cougar spirit,” says owner Bob Cady (’00 Hosp. Busi. Mgmt.), who frequented The Coug as an undergraduate and bought the business 18 years ago. “It represents the multigenerational shared experience that surrounds WSU.”

The ever-popular pub, which opened in 1932 and has always catered to students, celebrates 90 years this year. New signage is making their mark on The Coug since its earliest days, when students would carve their names into tables with penknives.

Back then, The Coug was known for its toasted sandwiches, house-made cake and pie, and, according to a menu found in a 1935-1939 scrapbook in the Manuscripts, Archives, and Special Collections at Washington State University Libraries, “thick malted milks.” Cofﬁer was a nickel. Milkshakes and ice cream sundaes cost 15 cents. Soup and most sandwiches were a dime. Booth service had a 10-cent minimum per person. And the most expensive menu items—egg malted milk, and ham and eggs with toast and apple butter—cost a quarter.

Today, burgers are $8 to $10.50. Pints and pitchers run from $3.75 to $22.75. And all ages are welcome until 8 p.m. The booths are long gone. On game days and most weekend nights, patrons are lucky to get a table. The Coug is often standing room only, with people packed elbow-to-elbow. The legendary WSU watering hole and eatery routinely makes lists ranking best college bars in the state and country. And that’s no surprise to Freberg, a member of The Coug’s exclusive Mug Club. Just 25 new members are selected each semester. “It’s an honor to be in the Mug Club,” she says. “It’s so steeped in tradition. You’re a part of something special, like being a Coug in general. It’s a forever tie to a really special place.”

The Mug Club dates to at least the late 1970s, when The Coug featured Quarter Pounder Nights and patrons could buy a beer for 25 cents. While some members take their mugs with them when they move or graduate, Cady says, “We still take care of about 1,200 mugs between our storage unit and on site at The Coug.” When out-of-town members visit, staff uncrate their mugs. “We prefer a week notice.”

Cady notes, “While The Coug might look different than it did in the ’30s, ’40s, or ’50s, the general feel and atmosphere of undergrad Cougs themselves—to reminisce over burgers and beers.

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Cady notes, “While The Coug might look different than it did in the ’30s, ’40s, or ’50s, the general feel and atmosphere of undergrad Cougs spending time together with their friends and enjoying their company is still what we do. That’s the heart of The Coug.”
CHRIS WINKLER wanted to conquer a longer ride. He had already biked from Seattle to Portland a half-dozen times. Once, he cycled from Tri-Cities to San Francisco as a particular example of what my appetite,” he says. “I toyed with a 48 states ride. Then I thought: how about a coast-to-coast tour?"

From June through August 2021, Winkler (’86 Chem. Eng.) cycled from Portland, Oregon, to Portland, Maine. Technically, he started his ride on the Oregon Coast, so it was truly a coast-to-coast tour.

“Chris just enjoyed the ride,” he says. “You’re in the fresh air. You’re riding long distances as much as the good days because it’s all part of the experience.”

COURTESY CHRIS WINKLER

She drove and tracked his progress, meeting him along the route to refill his water bottle. He rode around 65 miles per day, sporting a WSU jersey most days of the ride.

“You just enjoy the ride,” he says. “You’re in the fresh air. You’re working so hard physically. It’s about the experience and not knowing what’s going to happen and what you’re going to do to overcome it. I like riding long distances on my bike. I’m a pretty good solo rider. It gives me time to think.”

The entire trip took 87 days, and he and his wife, Cheryl, put just over 400 miles on the RV they bought for their adventure.

“I’d tell you I loved it. If I could, I’d be out there doing it still. You have hard days. But that’s the beauty of it. I enjoyed the hard days as much as the good days because it’s all part of the experience.”

BY ADRIANA JANOVICH
Even when I was still a student, I heard that small donations can make a big impact, so I’ve always found a way to give to WSU. And now that I’ve launched my career, I’m giving more—and in more strategic ways—to programs that are most important to me. It means so much to have a direct impact on the next generation of Cougs.

— Lindsey Elhart Baker, ’14
WSUAA Life Member / Former President of WSUAA Seattle Chapter
Honors College Advisory Board / Carson College of Business Mentor

Every year, WSUAA members make a huge impact on the entire Coug community through their gifts to Washington State University.

How huge? Since 2018, WSUAA members like you have given more than $10 million per year in support of programs across the WSU system: scholarships, Athletics, academic departments, faculty research, and so much more!

And this year, you’re on track to break all previous records!

It’s all because of you that we can share such a spectacular success story.

We appreciate your loyalty, your support of your beloved WSU, and your impressive Coug Spirit.

With gratitude,
Your friends at the WSU Foundation

ORGANIC AND GEOMETRIC, the 11 large light fixtures that illuminate the new Podium sports complex in Spokane dynamically shift light and ambiance throughout the day and night. Washington State University architecture professor Taiji Miyasaka and Seattle artist and engineer Clayton Binkley collaborated to create the installation, titled “Chromasphere.” They used reclaimed western redcedar, cut the planks into regular hexagons to be stacked spirally, then hung the fixtures in three clusters. The largest fixture measures 12 feet tall by 9 feet in diameter. The project was commissioned by the Spokane Public Facilities District and administered by Spokane Arts for the new sports facility.

The installation, which resembles pinecones, has interiors painted with a plaster made from recycled drywall waste that Miyasaka researches with David Drake at WSU. Miyasaka and Binkley designed the multicolored lights to adapt and express a different feeling as daylight shifts.

PHOTO BRUCE ANDRE

WASHINGTON STATE MAGAZINE SUMMER 2022