A WSU LAB IN MOUNT VERNON IS BRINGING BACK BREAD’S LONG-LOST NUTRITION AND FLAVOR

ALSO: AT HOME AT SCHOOL :: SHATTERING SOME GLASS: FEMALE SPORTSCASTERS BREAKING INTO THE BIG LEAGUES
Essential health sciences degrees.
Relevant life sciences research.
Crucial medical school formation.
Same WSU quality and experience!
The right work:: Vivian Maier worked as a nanny in Chicago for 40 years. She died in 2009 at age 83 and may have faded from memory but for her other, uncelebrated work as an amateur street photographer. After her death, Maier’s collection of 150,000 photographs, some of which were on display at the WSU Museum of Art from January to April, was auctioned off and released to the world. By children’s reports a fine nanny, her legacy for most will be the images that caught the panoply of people and scenes in Chicago, New York, Los Angeles, and other cities she visited with her Rolleiflex camera.

Those pictures of children, men, and women at bus stops and shops, in buses and on sidewalks show warmth, energy, and ennui of urban life, most taken while Maier ferried her charges through the city. She didn’t even develop many of her negatives. She never received a dime for her photographs.

As Maier’s story shows, work is not always about making money, although it’s necessary to pay the rent and put food on the table. We each define the right work to fulfill our lives, “Each singing what belongs to him or her and to none else,” as Walt Whitman said about the work of carpenters and homemakers. It can mean documenting one’s surroundings as Maier did, or pushing for a dream job, helping others who need it, or maybe even improving the world.

Sometimes putting a different kind of food on the table can make a better world. In this issue, Eric Sorensen visits the Bread Lab at WSU’s Mount Vernon Research Center, where wheat breeder Stephen Jones, his students, and a resident baker are redefining a staple. Sorensen finds a revolution underway, one in which local grains and rediscovered baking techniques can make a better loaf.

To the south, the work of WSU Vancouver professor Susan Finley and others can and will make the difference in the lives of homeless and impoverished children when they are out of school for the summer. Finley’s own experiences drive the At Home At School program, an innovative effort to make sure those kids have high-quality summer experiences and, at the same time, inform teachers about the special needs those children might carry into the classroom.

Some people have to jump some hurdles to succeed in the work they want. For women like Cindy Brunson and Jaymee Sire, who broke into the traditionally male-dominated field of sports broadcasting, the extra effort pays off. They and other alumni capitalize on their broadcasting training at the Murrow College of Communication to knock it out of the park.

Our work at times carries us in a new direction, as it has for our content editor and longtime writer Hannelore Sudermann, who wrote for this magazine for over 10 years. We will miss her writing acumen, editorial eye, and her ability to find and tell great stories. Like Maier, like many of us, she has left a mark and continues to follow her muse.

Larry Clark, Managing Editor
All the Best to You

Washington State University alumni produce some of the finest wines available in the world, and they have received well-deserved national and global acclaim to prove it.

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I am..., Yadira Olivera, a graduate student from Prosser, Washington. After I earn my Master’s degree in Prevention Sciences in 2015, I will pursue my Ph.D. at WSU.

On my research... For many parents, figuring out how to raise healthy, well-adjusted children who are prepared for success in life is overwhelming. We are developing and implementing novel programs to help parents teach their children effective coping skills in Pasco and Prosser, Washington, and in La Habra, California.

On my future... I want to implement and evaluate effective intervention programming to help low-income and underserved populations. I would love to help parents in these communities learn effective skills to build healthy and positive relationships with their children.

To WSU’s donors... Your remarkable generosity allows me to tackle these issues head on. Your support empowers thousands of Cougs, like me, to make a tangible difference in the lives of those who need us most. Thank you!

www.winebycougars.com

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The GI Generation speaks

"Edgar’s note: We received a great response to the spring 2015 article “After the War” from a number of alumni. Here is a Washington State College alumnus in the late ’40s and early ’50s (and now a lawyer) who shared his recollections of the time and wonderful anecdotes of the college. Several of these letters are excerpted below. Please visit Posts for Summer 2015 at wsm.wsu.edu to read the full letters.

The article “After the War” in the latest edition was outstanding and really told what it was like back then. I bring back many memories. Bill Ritch is in your report and I know him. One of his best friends was Bob Berry who was my roommate the first year in north housing. He and Bill would anonymously depart the football paper with criticism. After a time of this, the staff pleaded with them to come forward and help us with the paper, which they did and both became editors."

Dick Kennedy ’50 Spokane

Your fine story, “After the War,” stirred up many memories that were critical elements of my life. I too was one of the thousands of WW II veterans enrolled at Washington State College during the period of time described. Like many of the veterans served so well during those years, my college education was not the result of a typical approach to enrollment. I had not been an outstanding high school student and had been told by a high school counselor that I was not college material. After leaving the service, I went to work in a mobile food service job. While serving customers across the street from the main entrance to the Western Washington Fair, my past high school agriculture teacher walked up, spotted me and said: “What in the hell are you doing, Vitaldo?” Two days later I was on the Washington State campus, temporarily living with a friend while completing my enrollment procedures. I do not know where the “can do” attitude came from that caused me to make the sudden transition in my life. In October of the following year my wife Carol and I were married by a justice of the peace on a T.U.B. and worked part-time on the two-story temporary buildings described in your article. Life was not immediately “a bowl of cherries” because that winter was very cold. I studied in my overcoat and our car was buried in snow for months. My wife secured employment in the state government. In October of the following year my wife Carol and I were married by a justice of the peace on a T.U.B. and worked part-time on the two-story temporary buildings described in your article. Life was not immediately “a bowl of cherries” because that winter was very cold. I studied in my overcoat and our car was buried in snow for months. My wife secured employment in the state government. In October of the following year my wife Carol and I were married by a justice of the peace on a T.U.B. and worked part-time on the two-story temporary buildings described in your article. Life was not immediately “a bowl of cherries” because that winter was very cold. I studied in my overcoat and our car was buried in snow for months. My wife secured employment in the state government.

Peter W. Westmore ’54 Birmingham, Alabama

Edgar’s note: Thank you for the correction. Peter Westmore, in fact, the student body president in 1954. In my search of the information, coming to Washington State, Wally Slomovic wrote: “George Cosby, president of the class of ’52, and Keith Jackson, president of the class of ’54, approached the article. Jackson was the freshman class president in 1952, while the Compton letter was sent in LIFE magazine.

“After The War” was particularly interesting since I was on campus during the years 1942-1953. No it did not take me that long to graduate! My older siblings began their education before the outbreak of WWII, and then returned in the late 1940s to graduate, and I made the trip from Spokane many times in those years. In fact, my residence was Pine Manor (now demolished), which housed WOMEN during the war years and then had MEN sleeping in triple bunk beds after the war. I enjoyed that “privilege” the fall of ’49 when my roommates shared a sleeping room.

Rick ’53 and Mary Jeanne (Murphy) ’56 Mount Vernon

Plantsville, Arizona

I enjoyed Larry Clark’s article “After the War.” Mr. Clark notices that the wartime housing was ranked by 1982 but I remember it differently. I was on the housing committee in 1983. At 3rd and SW, Coach Ken Struckmeyer would yell at his troops on Spokesman Street, on the downhill side of Pinewood Manor, looking across the street at what we knew as “married student housing.” On those early mornings, while waiting for the vans, we would try to kick pine cones down the chimney of the little houses. Eventually the rain of pine cones on the roof would bring out some angry Dad in his pajamas who would shake his fist at us from across the street.

Bob Leglich ’48 Cle Elum

Extended WSC (until) back in ’49-81, when we GIs were still overloading campus facilities. Back then our three-story dorms for frosh women, men undergrads and non grads were temps, literally handing woodflooring. And we had one veteran setting up political rallies that really was the full furnishings of a two-undergrad. A common big “fist” and shower room door down the hall. Much better than many of our former Army conditions during WWII, no social complaints that I ever heard, surprisingly not even from the young fresh students just out of high school.

Eugene D. Duffy ’51 Dayton Beach, Florida

Praise for Ernie Kent

Although I always read the magazine, the spring 2015 issue was especially interesting to me; particularly the item on Ernie Kent with whom I have been in contact. I am a 1943 graduate of WSC (then WSC). Last night I watched the Cougar-ASU game and was thrilled by their win, surprisingly not even from the young fresh students just out of high school.

Leach can start having some bright days. We have a style of coaching that showed in the by their win, but also that Ernie Kent my source of the information, particularly the item on Ernie Kent with whom I have been in contact. I am a 1943 graduate of WSC (then WSC). Last night I watched the Cougar-ASU game and was thrilled by their win, surprisingly not even from the young fresh students just out of high school.

Leach can start having some bright days. We have a style of coaching that showed in the
Mashing up new landscapes

by Eric Sorensen

If avoiding zombies is high on your list of priorities in Pullman, you'll want to steer clear of the Stephenson Towers and the Rogers and Orton residence halls. Wilmer/ Davis and Community (Duncan Dunn) are pretty dodgy, too.

If you have trouble deciding which you prefer to see, a Sasquatch or aliens, you stand to see plenty of both on the western sides of Snohomish, King, and Pierce counties, particularly in the county. This is no idle musing. This is documented and illustrated research, cast into readily viewable and interpretable form through the wonders of Geographic Information System technology, or GIS. For 18 years now, Washington State University’s GIS coordinator, Rick Rupp, has been guiding hundreds of students and other scholars through the joys of mashing up seemingly disparate data sources and viewing them on a map.

“You can take data from completely different sources and the only thing they have in common is the spatial aspect,” says Rupp. “You can draw a largely interesting conclusion based on it. It allows you to compare things you never thought you could compare before.” It’s powerful stuff, so much so that Rupp cautions students to keep things simple, to “aim for communication, not complexity.” It’s ok to bend reality a bit as a classroom exercise, which explains how zombies and aliens end up getting around in the room: Native American populations and population densities around the state, by county, distressed home values around Puget Sound in 2011, places in the United States that receive the most nitrogen-rich rain, U.S. places with the most pathogen-impaired water bodies, Gulf of Georgia archaeological sites and nearby salmon and herring waters; the two-month, 500-mile journey of a young wolf as he leaves his pack in Central Washington for British Columbia.

Rupp comes upon a poster about a “wolf-hunting survey” in central Idaho’s Mapto-National Park and summons its author, doctoral student Azzurra Valerio, to come over and explain. Data for the map came from teams that traveled around the park and howled, she says. Unlike adult wolves, wolf pups can’t still a human howl from a howl howl, so they howled. Researchers could then pinpoint the locations of the howls to count more than two dozen home sites throughout the park.

“The first time was a revelation,” says Valerio. “Because we didn’t have so many data about the wolf population in that territory.” Across campus in College Hall, anthropologists are using GIS to look back in time, to the pueblo dwellers of the pre-colonial Southwest. For her master’s thesis, Stefani Crabtree, a doctoral candidate, connected archaeological sites with why people were there and what they were doing, running computer simulations in which “agents”—proxies for people—walk around the landscape and exchange food. Different simulations showed different relationships.

“My program helped final students on the landscape in the archaeological record as well as the simulation,” she says, “and I could directly compare how clustered those were and talk about what was going on during those times.”

Her conclusions found their way into the Journal of Archaeological Method and Theory, where she said food-sharing practices were critical for the pueblo people’s survival and contributed to their living in clustered settlements.

“We can see this in the simulation and we can see it in the archaeological record,” she says. “This is possible through really understanding the landscape with GIS.”

A perfect vessel for wine research

by Marisa Sorensen Lamb ’10

“Do you know what kind of wine this is?”

Thomas Henick-Kling, director of the viticulture and enology program at Washington State University Tri-Cities, asks as he gently places his hand on a wall in the new Wine Science Center. “Red?” He responds instantly as I quickly realize the limitations of my wine knowledge—especially in front of a leading researcher and professor of wine science.

He offers a small laugh. “It’s the perfect kind of red.”

The color of the red paneling on the walls of the Wine Science Center on the WSU Tri-Cities campus is an exact match of a “good red wine.” It’s not too orange or too brown, but a deep red.

The attention to detail, down to the exact color of the building, is intentional and precise. The Wine Science Center (WSC), scheduled for its grand opening on June 4, 2015, was “designed from scratch,” says Henick-Kling, and built with the users in mind: researchers, students, scholars, building maintenance, and other staff.

The resulting facility is unique—the WSC in a research and teaching winery. Not only does it address the needs of viticulture and enology researchers, teachers, and students, but it includes industry.

This merging of fields is the WSC’s “most valuable attribute,” notes Henick-Kling, as it allows so many synergies. “The WSC brings together a wide range of disciplines in the field and fills a gap in research needs to keep the wine industry moving forward.”

To do this, location is key. WSU Tri-Cities is an ideal place for the WSC and viticulture and enology program because of the region’s grape and wine industry. “Within one hour we can reach more than 80% of the grape production and wine production in the region,” says Henick-Kling. This encourages collaboration between researchers and industry partners, and it provides opportunities for student learning and research in commercial vineyards and wineries.

The dry and sunny climate, combined with cool nights, allows wine grape growers to carefully manage irrigation—the amount of water in
vines transform into a smooth, finished product. This place is more than an entryway—it welcomes the public into a comfortable area to meet, mingle, and taste wine and allows for visibility and accessibility to all areas of the facility. VSC visitors tasting wine in the entry can peak into the fermentation room without setting down their glasses.

Directly west of the entryway is the WSC's teaching wing. Designed specifically for viticulture and enology students, as well as wine business students, these classrooms boast perhaps the most carefully considered element, space. Like never before, classrooms have enough of it—tables and chairs without any bumps. The “rough to finish” architectural aesthetics parallel the winemaking process: The rough vines transform into a smooth, finished product.

Following harvest, grapes move to the processing areas where grape juice becomes wine. Fifty years ago, activists in Alabama called for people to come from the far corners of the country to participate in what would become one of the most significant events in the history of the civil rights movement: a five-day march for voting rights from Selma to Montgomery. Fifty years later, the small college town in eastern Washington was buzzing over the news of the day in Selma that came to be named “Bloody Sunday,” when state troopers and a local posse attacked 680 marchers on March 7. Two days later, a second march was turned around amid fear of a confrontation. It was called “Turnaround Tuesday.” That night a minister who had come from Boston to participate was beaten and murdered by the KKK.

“People throughout the United States were horrified that people were being treated this way,” says Jim Barker, a WSU staff member and photographer who found that his skills put him in the path of history. On March 8, a Friday afternoon, Barker got a phone call from a young minister working with the Kingman House. A group of citizens from campus and town had pooled their money to send
The next morning, they headed back to Brown Chapel. Cole and Warren milled with the crowd and Barker took pictures, including an image of Martin Luther King Jr. and John Lewis minutes before the march began.

"Then it somehow just started and thousands moved onto the highway, says Barker. "We fell in and just followed it all the way that day, about eight miles."

"It was fraught with anxiety," says Warren. "We were constantly harangued by the locals."

Fifty-four miles later, under the protection of the National Guard, the marchers arrived in Montgomery in a downpour. Barker took shelter on a porch and captured the sodden, yet triumphant participants as they moved into the city.

The men returned to Pullman with stories, memories, and about 14 rolls of black and white film. Barker showed his images at the library and they all talked about what they experienced in Alabama. It was not only a turning point for the civil rights movement, triggering the Voting Rights Act several months later, it was a signal event for the three from Pullman.

“It had a transformative effect on my life,” says Warren, now president of the National Association of Independent Colleges, and former president of Ohio Wesleyan University. He has a long history of community service and civic engagement.

Close to 8,000 people assembled in Selma, Alabama, on March 21, 1965, to march 54 miles to the state capital of Montgomery in support of the constitutional right of African Americans to vote.
Trout, heal thyself

by Rebecca L. Phillips

Winding its way through southern Idaho, the Snake River sidles along a stretch of dark basalt rising above and farmland. In the Thousand Springs region, an enormous aquifer sends water bursting from the rock in a cascade of waterfalls and creeks. Cold, clear, and full of oxygen, the water is heaven for rainbow trout, and life-giving to some of the world's largest trout farms.

A few hundred miles to the north, water bubbles and roars through pipes at the University of Idaho Aquaculture Research Institute in Moscow. Researchers Kenneth Cain '97 PhD and Douglas Call '87 BS and '97 PhD gently net young rainbow trout from large round tanks and examine them for signs of coldwater disease.

Cain, professor and associate director of the institute, says that coldwater disease occurs in the wild but is most prevalent in commercial trout and salmon hatcheries, where crowding and stress lead to frequent outbreaks. The deadly bacterial infection eats away the trout's skin, leaving ragged ulcers. The disease kills up to 30 percent of hatchery stock and causes millions of dollars in losses.

After 15 years of effort, Cain and Call have developed a simple and effective method to combat coldwater disease by turning some of the trout's own intestinal bacteria into infection-fighting probiotics. They also showed that the probiotics work by secreting a toxic protein, which does not harm the fish but does kill the coldwater disease organism, Flavobacterium psychrophilum.

Call, a professor in the Paul G. Allen School for Global Animal Health at Washington State University, and his graduate student, Carla Schubiger '15 PhD, reported the findings earlier this year in the journal Applied and Environmental Microbiology.

"Coldwater disease is the number one bacterial illness affecting U.S. trout aquaculture and to a lesser extent coho salmon," says Call. "Once an outbreak starts, the only way we've had to treat it has been with antibiotics. The problem with antibiotics is that they can lead to bacterial resistance and also contaminate the water and soil."

Call believes the probiotics could be an economical alternative to antibiotics, and welcome news to the global $13.7 billion salmonid aquaculture industry.

"The pellets are part of a new frontier in medicine—one of the body's natural population of bacteria, called the microbiome, to boost health and immunity. The National Institutes of Health estimates that bacteria outnumber our body's cells ten to one. While no one knows the full extent of the microbiome's impact on human health, scientists do know that 370 trillion bacteria in each of our bodies are essential for life. Liver and stomach producers hoping to leverage the microbiome sometimes feed their animals probiotics like Lactobacillus to promote disease resistance and overall health. But Call says most products are unregulated and unproven. "It's kind of the Wild West in terms of claims of what these things can do." "

"Fish food coated with the probiotic," he explains. "The bacteria are fast growing, cheap to produce, and easy to feed to the fish—all the attributes of an ideal preventative treatment." "

"But they didn't see it quite that way, says Warren. "If ever there was a time to stand up and be counted, this was it."
Panoramas

School students were worrying about SATs and WSM to pursue a degree in theater production, after to Pullman and Washington State University. The majority of my energy was spent just trying to wonder where to go for college, Benjamin Gonzales was fighting for his life. He had just been released from the hospital in April after a bone marrow transplant, says Gonzales. “It’s a unique setting with cold water trout farms on one side of the river and hot springs with tropical fish on the other side,” she recalls fondly. “It is an absolutely breathtaking and beautiful landscape.”

Schubiger became involved in the project after Call asked Schubiger if she’d like to try to pinpoint what makes C6 so effective. After some frustrating challenges, she determined the probiotic produces a toxin protein that inhibits the coldwater bacteria. “It was surprising,” she says. “The protein had been overlooked and underestimated for 25 years. At first I was skeptical about putting all my effort into testing this one peptide—it was risky, but we were lucky and it panned out.”

At center STAGE

By Emily Smudde ’12. While other high school students were worrying about SATs and wondering where to go for college, Benjamin Gonzales was fighting for his life. Born and raised in Port Townsend, Gonzales spent his junior and senior year of high school battling non-Hodgkin’s lymphoma, a cancer of the white blood cells. During his time he left the hospital, applying for college was the furthest thing from his mind. He had just been released from the hospital in April after a bone marrow transplant,” says Gonzales. “I had the idea to let the students perform some improv comedy after the show. The Nuthouse was born,” says Gonzales. “I told him to get it out of the community after that.”

After the production, Gonzales saw the opportunity to rebuild the group from the ground up. Gonzales and a group of his theater friends joined STAGE and elected new officers. Gonzales rewrote the constitution, clearly defining the roles of the officers, and established a one-act play festival to build participation.

“Ben basically took the reins and formed a new community,” says Franz. “It was the first carrot,” says Gonzales. “It could really do this.”

Franz, inspired by the WSU group, became director of a high school theater program in California. Before he met Gonzales he only saw theater as a hobby, but now he knows if you’re passionate enough anything is possible. “I always track my students to follow their dreams,” Franz said. “STAGE opened doors for me.”

After graduation, Gonzales went WSU briefly and then came back to pursue his master’s in teaching. The theater department asked Gonzales to teach the intro to theater class. Eventually his temporary position morphed into three-quarter time, then into an instructor, and finally into faculty. “They hooked me up one class at a time,” Gonzales says with a laugh.

When Gonzales returned, STAGE still existed, but the quality had dipped. He again decided to take an active role. More than fifteen years after he rebuilt STAGE from the ground up, Gonzales is now the main faculty advisor to the group. “The students, theater is learning and having fun at the same time,” says Gonzales. “Theater makes you smarter. It makes you challenge your self and open your mind.”

At the University of California, Gonzales wrote a play about his roommates called During the Obvious during his freshman year. He submitted it to the Port Townsend One Act Play Festival the summer before his sophomore year and, without any prior experience in playwriting, won second place. “It was the first carrot,” says Gonzales. “It said I could really do this.”

He took his play to the STAGE executive, the only active member of the group at the time, and his play was accepted for the spring show. There was one problem: His play was barely an hour, Gonzales rewrote the constitution, clearly defining the roles of the officers, and established a one-act play festival to build participation. “Ben basically took the reins and formed a new community,” says Franz. “It could really do this.”

Franz helped make it part of the community after that.”

It’s Your Future

Earn your degree while continuing to work.

Drawing on Paris experiences

By Katrina O’Ryan ’15. People around the world dream of going to Paris, lounging in the shadow of the Eiffel Tower, and strolling alongside the historic Seine River. A group of 14 WSU students, led by design professors Carrie Vieille and Robert Kikka, turned this fantasy into an exciting study experience in the summer of 2014.

After 4,900 miles, and 12 hours, they arrived in the City of Lights facing a blast of ice and ready to explore. Hopping aboard a cab, the wide-eyes students dropped their stares off at a seventeenth-century hotel near the Louvre, and hit the streets before they fell asleep. With only 12 days to cover the 41-square-mile city, there was little time to rest. Walking around the Parisian streets merely to stay awake, they stumbled upon a centuries-old ribbon and button shop. “Now, that doesn’t sound like it would be anything other than a fabric store, but let me tell you, you walk in and you instantly feel these 300-year-old teal Bore doors creaking under you. As far as the eye can see are these door knobs of light coming in before you even walk in, but they’re highlighting these flowers, turquoise, and teal ribbons that are blowing in the breeze. It’s just like being in a movie,” Vieille explains.

Sophomore Abigail Metcalf and junior Julie Harvey joined the small group of students for this opportunity. This was not the first time in Paris for Harvey, but joining the study tour brought a whole new light to the city. “To go with Rob and Carrie brings such an educational component to it, and really cannot say enough about the experience, as things that you don’t even think about. It makes you see and design a little differently.”

Sketchbooks in hand at every stop, the students documented their voyage with striking illustrations. Sketching can be an intimidating task for those who’ve never picked up a sketchbook, but Vieille and Kikka offer support and instruction. Art brings a firsthand appreciation for the vast amount of details and uniqueness in each building.”You’re just in the moment when you’re sketching. You have to be. You’re
studying the whole building in a different way,” says Harvey.

Students partook in more than sketching. Metcalf is a photography fanatic, and chose to study the monuments through her camera lens. Sketching through the eyes of your passion has the power to make everything more remarkable. As Metcalf reminisces on the most memorable parts of the trip, her face illuminates.

“I was sitting there when Bob was sketching and I took the photo of a few classmates in front of me with Bob standing there and the Eiffel Tower in the background. It just sunk in that I was in Paris having class underneath the Eiffel Tower. I was sitting in the lawn croissants-apple sauce, with my camera. It was simple but truly mind-blowing,” says Metcalf.

The students soaked up the knowledge from their leaders. “We’ll have breakfast in the hotel every morning: croissants, fruit, and coffee. Then it’s usually too crowded in there to talk about things so we find a quiet space on the site and have class about the site we’re,” explains Krikac. He and Vielle taught at the hotel every morning: croissants, fruit, and coffee. Then it’s usually too crowded in there to talk about things so we find a quiet space on the site and have class about the site we’re.

After their studies, the students departed for three days of exploring independently. “That’s another really special experience of this specific study tour,” says Vielle. “It’s a faculty-led tour but students still get to branch out and experience it on their own.” Some chose to revisit their favorite locations, and some chose to leave Paris completely and travel around France. Metcalf traveled 440 miles south to Uzes, France, and returned home with more than she ever imagined. “The tickets ended up being kind of expensive, but I didn’t care. I was only here once and it was really exciting. I went to Uzes and met a guy that I’m still dating,” she says, with a huge grin on her face, “and now he lives up being kind of expensive, but I didn’t care. I was only here once and it was really exciting. I went to Uzes and met a guy that I’m still dating,” she says, with a huge grin on her face, “and now he lives in Seattle.”

Letters to the future

by Gay Bergstrom

In 1989, the state of Washington celebrated its 100th birthday. As a young girl sat inside the capitol dome and swore an oath, that oath involved a two-ton green vault corrod...
Eat like an athlete

By Larry Clark

Fuel, train, and dominate is the driving philosophy for student athletes at Washington State University.

Take care of your body. Fuel it with the best foods available," says WSU sports nutrition coordinator Lindsay Brown. "You’ll be able to train at your maximum level and reduce risk of injury. Then you’ll be able to dominate your competition."

To keep student athletes going strong, they receive free, healthy food at the Gray W Legends Lounge dining room located in the new Cougar Football Complex building through a program called Cougar Express, and, for pre- and post-workout fueling, the Hubs located in the Bohler and Cougar Football Complex weight rooms.

They won’t find Snickers bars and pop there. "We are trying to decrease the consumption of pre-packaged items that have a lot of preservatives and are less nutrient dense," says Brown. "We make our own hummus dip. We do granola-yogurt parfaits with high-protein Greek yogurt. We bake our own granola bars and provide those for our athletes."

Brown says WSU Athletics wants to define what “fuel” means, not just for the students’ training, but in their daily lives. That might mean stock pews with vegetables, a hard-boiled egg, and cheese, or it might mean a well-balanced meal at the new dining facility overlooking the football field.

“You’ve here to enhance performance now for our student athletes, but the broader picture is that whatever we’re teaching the athletes will actually enhance their life and well-being,” she says. That attitude, strongly advocated by WSU Athletics Director Bill Mous之, doesn’t just appeal to the students currently at WSU; it helps with prospective student athletes. "I think the parents are the most excited during recruiting trips. They know that their child is going to have access to good quality food," says Brown. It helps that nutritious foods are free, a rare benefit among collegiate athletic programs.

A certified specialist in sports nutrition and a registered dietician, Brown got into nutrition as a high school athlete in track, cross-country, baseball, cheerleading, and wrestling. After she got her bachelor’s and master’s degrees at Oklahoma State University, she went to work at a Colorado hospital because there were only about 15 sports nutrition positions in the country at the time. Brown never lost her love for sports nutrition, however, and joined WSU in August 2011.

As one of the few registered dietician sports nutritionists at a U.S. university, she leads meal and nutrition planning and organizes nutrition screening assessments that introduce athletes to her services and identify high-risk nutritional deficiencies.

She and her staff do presentations for teams and small groups, have quick post-workout sessions on performance-enhancing nutrition tips, and highlight nutrition topics each week on message boards and newsletters. Brown says they provide recipes, host small cooking demonstrations, and encourage cooking at home.

**How to eat like an athlete**

Don’t consume an excessive number of calories if the activity’s not there.

**MAKE SURE YOU’RE ACTIVE LIKE AN ATHLETE**

Eating 5-6 times throughout the day will ensure your body has energy to call upon for any hard workout and will help keep your metabolism elevated.

**EAT FREQUENTLY THROUGHOUT THE DAY**

Start early in the morning because when the day gets away from you, you can’t catch up. Try to wake up if you are properly hydrated if you are going to be using the bathroom early in the morning and you want to be in a homeostatic state. If you are using the bathroom every 1–2 hours and your urine is a lemonade color. If you are using the bathroom every 3+ hours and your urine is darker like apple juice you are probably dehydrated and need to increase fluid intake.

**HAVE A RECOVERY SNACK**

If you’re going to work out for 60 minutes or longer with moderate or intense activity, you’ll want a carbohydrate/protein combo for recovery because you need to replenish muscle energy stores and repair and build muscle fibers as you exercise. You have about 30 minutes after you exercise that window for best effect.

**EAT THE RAINBOW**

Have a variety of fruits and vegetables in different colors, because each one provides different nutrients, vitamins, and minerals. Eat from all six food groups: carbs, protein, vegetables, fruits, high-calcium, and healthy fats.

**BE WELL HYDRATED**

A lot of people don’t know supplements aren’t regulated. A supplement can be on the market without being tested for purity or contamination. The bottle may say caffeine free, but in fact it contains herbs such as green tea extract or guarana seed which are both central nervous stimulants. Always speak with a registered dietician-nutritionist or health care provider before starting any new supplement regimen.
Barley may have been planted in Egypt during the time of Jesus. It is in extreme climates that barley remains "with production at higher latitudes and altitudes and farther into deserts spreading throughout the Old World from the Fertile Crescent between western Asia and northwestern Africa. It fueled the gladates of Rome, known as "hordearii," or "barley men." It gave us the English word "barn." But most WSU barley varieties have been for animal feed, which brings a lower premium than food barley. Murphy is now looking at six different food lines high in beta-glucan that are about to get into taste tests from a "A team of bakers and chefs who work closely with Stephen Ullrich, assistant at the WSU Mount Vernon Research Center. Meanwhile, eat more barley. And drink more barley, too. I work on increasing the demand for malting barley every night at my house," says Murphy, whose office door sports a "NO BARLEY, NO BREAD" sign.

The state's young craft distilling industry needs malt too, and has to buy half its raw ingredients under a rule aimed at helping farmers and the Washington economy.

Just as he is doing with bakers and chefs, Murphy is planning to have malsters and brewers sample malts made from several lines from his test plots. "I can't tell you how excited I am about that," he says. "We'll be able to find barley varieties that are specifically adapted to certain regions of Washington that will go to Washington or Idaho or other Northwest malt houses and then go straight to specific brewers. And brewers can pick varieties that they like. I think it will really open up the market and the acreage."

"We hear from growers that they would grow barley in a heartbeat if they could make a profit off of it," says Murphy. But when food barley prices are low, that's difficult to do, he says.

Over the decades, WSU barley breeders have produced several successful, if not legendary, varieties. Bob Nilan had the high-yielding "Steptoe," and Ullrich had "Bob," a rust-resistant variety named for the "Barley Bobs," Nilan and Bob Edick '31, a Montana State University barley expert. Murphy has put out "Muir," named in part for Carl Muir ('53, '07 PhD) and Mary Palmer Sullivan '88 are trying to change that.

For a quarter century now, Mary Palmer Sullivan has been trying to get people to eat more barley. Courtesy U.S. Grains Council. Below: WSU barley breeder Kevin Murphy is working on tasty, grower friendly lines of barley for food and for malting. Photo Janet Matanguihan.
Early mornings in the summer, a school bus trundles through the neighborhoods of Battle Ground and Vancouver picking up children from homeless shelters and neighborhood schools. On board, the little ones, though groggy, help themselves to nutrition bars. For some, it’s the first meal of their day.

The cargo is ferried through the city and up a winding drive to the Washington State University campus, where college students wait to shepherd the children into a classroom. They have their welcome, more food, and a choice of courses for the day. Some may take a nature walk. Others head out for a field trip to a farm where they can garden. A group might visit a museum. Or they can stay on site and create art, or shoot pictures or video, or learn music.

In Clark County, 10 percent of the population lives below the federal poverty level, and nearly half of that group is under 25. According to a recent American Community Survey, more than 13,000 of the county’s residents in poverty are between 6 and 18 years old. Economics, cultural barriers, and transience are all impediments to a child’s success in school, and ultimately in life.

For the past 13 years, Washington State University Vancouver has sought to change that. While their classmates head off to family vacations or summer camp, a portion of the most vulnerable Vancouver-area children have been part of a special laboratory called At Home At School. With three key missions, the program seeks to help children overcome their social and economic challenges, prepare the next generation of teachers to work with disadvantaged children, and offer a testing ground for teachers and scholars to design and adjust projects for this special population.
Growing up, Anastasia Kuzmina was both poor and homeless. When she was 10, she and her mother moved across the world from Vladivostok, Russia, to Washington. They were heading to a better life, but, as Kuzmina tries to explain, the next few years were complicated.

“My mother married, then divorced, and we lived in shelters and took advantage of public resources at times,” says the WSU human development major. Several years ago she, her mother, and her younger sister moved to Vancouver. Kuzmina’s mother worked as a beautician and Kuzmina had to stay home and babysit.

But a seasonal job with the At Home At School (AHAS) program offered an alternative. Kuzmina could spend her summer days away from home, earn money, and gain experience that might help her find another job or even get into college, “I saw an opportunity and I took it,” she says. “I didn’t want to work at McDonald’s.”

She was quickly enmeshed in a complex WSU project, and she empathized with her charges. She didn’t realize it at the time, but while working with younger children in an arts-integrated academic support program, she was also benefiting. It has led her toward her degree as well as a certificate program in child case management. She hopes to graduate next year.

The summer job was about meeting the needs of younger children who might otherwise be stuck at home alone in front of the television, or outside without supervision. “They came in dragging in the morning,” says the WSU human development major. “I saw an opportunity and I took it,” she says. “I didn’t want to work at McDonald’s.”

“Then they realize it’s me.”

In teaching education and public affairs, Finley wants to break the assumptions surrounding poverty and show her WSU Vancouver students that given support, opportunity, and an understanding of their rights to an education, young people with limited prospects can find their way to better lives.

Despite her own challenges, Finley finished college with honors and found a good job as an editor. But she was drawn to the more challenging world of the Detroit Youth Foundation, where she helped open street schools, as part of a broad understanding of “kid issues.” That led to her role as director of youth services for Washtenaw County in Michigan, where she oversaw the foster program, summer youth offerings, and juvenile detention.

From there she got a doctorate in education at the University of Michigan. Her scholarship focused on the philosophy and history of education as well as research theory, studies, and assessments. The field offered many opportunities for inquiry, but it led Finley away from the youth offerings, and juvenile detention.

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The response is that she has virtually no chance,” says the professor. “Then they realize it’s me.”

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Sometimes, when she shares case histories with her students, Susan Finley brings up a child in a low-income family whose father had been incarcerated and whose mother struggled with an assortment of issues. She experienced homelessness; she had no plans for college, and she was pregnant in a late term,” says Finley. “And then I ask, what are her chances of success?”

“The response is that she has virtually no chance,” says the professor. “Then they realize it’s me.”

In 2002, Finley came to WSU Vancouver, choosing the job because of the potential for building her own program at the relatively young campus.” This was a new place and I had an opportunity to create something,” she says. “Poverty is poverty. But here I had an ability to develop something totally new.”

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It didn’t take long. “I had been researching street kids all over the country, and when I came here, word got out,” says the WSU human development major. “One day at the end of my first year, I got a call. “Summer was approaching and a homeless shelter was grappling with what to do with the children who would no longer have school to go to every day. “I was asked to help set up a program for them,” she says. That first summer, 30 students enrolled in the summer youth offerings, and academic tutoring.

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Finley worked with these children, Finley realized they felt like outsiders in their schools. They struggled to keep up with their classmates and their teachers didn’t understand or empathize with their challenges of transition and alienation, or being new and out of the group. One teacher, admitting her own predisposition and limited resources, talked about a child who came in without his parents or class materials. She seated him at the back of the class because she knew he wouldn’t be there long.

Out of her visits and discussions came the notion of At Home At School, an effort to help the children overcome their lower status at their schools and provide them with the confidence to seek the support to which they are legally entitled.

The goal is to encourage the students to write their own futures,” says Finley. “They can use their creativity and critical thinking skills to change their own lives.”

In 2004, the AHAS program quickly outgrew the shelters and moved into Vancouver school buildings vacant during summer break. Former At Home At School is an associate director of school program, Finley expanded beyond the homeless to include other children with socioeconomic and economic barriers. Some were first-generation immigrants who didn’t speak English, others were from impoverished and single-parent families.
She also focused AHAS on teacher education, offering WSU students and scholars a chance to work with and study a diverse and complex community of children and families. Some of their efforts have resulted in papers on subjects like the role of arts education in social change, bridging homelessness as an experience with homelessness as a public issue, and issues of diversity in teacher education.

Now AHAS has many components, including organizing volunteer work among at-risk children during the school year, expanding the initial summer program, and developing a “play school” for acculturated children who haven’t had nursery school or kindergarten. It is the source of Back on Track, an effort to help superseded and expelled students re-enter public school. “We piloted it through AHAS and Vancouver public schools took it on,” says Finley. Erica Niewonger ’07, a former student, now runs it for the school district. “By putting these things together, we end up modeling programs that others may need,” says Finley.

In 2012 the At Home At School effort burgeoned with 600 participants. “And the community need is still growing,” says Finley. But a downtown in public support (the example Washington state is Not left behind grant program has not received funding since 2003) and a need to streamline resources caused AHAS to scale back to about 500 children. To gain more money, Finley may be able to back it up.

The program now includes both arts and music-based charities and charitable organizations like the Wolf Family Foundation and the Community Foundation for Southwest Washington.

But Finley isn’t content to build something and let it be. “Now, every year, every phase of it is different.” She says. Two years ago, the central focus was on food and social justice. Many of the children explored healthy eating, community food systems, and urban gardens. They also worked with an artist and created a four-panel traveling mural. “It requires a certain kind of mind to see beauty in a hamburger bun,” founder Ray Kroc later writes in his autobiography, Grilling It. “Yet, it is any more unusual to find grace in the texture and softly curved silhouette of a bun than to reflect lovingly on the hackles of a favorite fishing fly? Or the arrangement of textures and colors in a curved silhouette of a bun than to reflect lovingly on the hackles of a favorite fishing fly? Or the arrangement of textures and colors in a butterfly’s wing?”

Finley went on to call the bun “an essential material in the art of serving a great many meals fast.” In its own way, it’s artisan bread. Ray Kroc style.

Now comes the new artisan bread. In its ideal form, it is most every-thing that the McDonald’s bun isn’t. Its whole grain, not bleached white. Biscuit is regionally grown and milled, preferably fresh, not bleached from sources around the United States. Like so much of the modern world’s bread, the McDonald’s bun can stretch the definition of bread to include a bewildering list of ingredients, from high fructose corn syrup to extra glutin to the “yoga mat” compound azodicarbonamide. A proper loaf of artisan bread can have as few as four ingredients: water, salt, flour, and the story of naturally fermented yeast and bacteria that makes it technically a bread, but not necessarily sour. And where the McDonald’s bun is inoffensively plant, sweet, and largely a vehicle for all-beef patties, special sauce, lettuce, cheese, pickles, and onions, this new bread is a roost of textures and flavors, some of which go back millennia to the wood-fired origins of bread, others to the very soil it’s from.

This wholesale reconsideration of bread and what it can be as a relative latecomer to the recent public reexamination of food and the means by which it is raised, distributed, and prepared. But it’s no less revolutionary, dealing as it is with the staff of life and working to create the greatest thing since its mass-produced, plastic-wrapped sibling, sliced bread.

The most visible forces in the movement are chefs and bakers, food writers, and health and environmental advocates. Appearing alongside them, underwriting its sciences in seminars, grain gatherings, features in a trifecta of New York print media—the New York Times, The New Yorker, and The Grain Diver—and in an upcoming documentary, The Grain Diver, is Stephen Jones, director of the WSU Research and Extension Center at Mount Vernon.

Jones wants to reengineer the bread system from the seed up. A wheat breeder by training, he is combing through tens of thousands of varieties to develop wheat to specific growing areas, with flavors that can have an actual taste, like wine. He would like these varieties milled locally and baked locally, or at least regionally. He would prefer that the bakers use the whole grain, capturing the protein, microinutrients, fiber, and flavor lost in white bread and largely overlooked in what is currently sold as whole wheat.

At Home at School

One of her students had to be freed of the burden of supporting her family. She tried sharing an apartment, but the roommates legalized children and families. Some of their efforts have resulted in papers on subjects like the role of arts education in social change, bridging homelessness as an experience with homelessness as a public issue, and issues of diversity in teacher education.

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Billions to Be Served

To that end, he created the center’s Bread Lab. It has its own baker, five graduate students, an annual grain conference, and support from the likes of Cliff Bar, the King Arthur Flour Company, and Chipotle Mexican Grill, the fast-food chain that serves simple, unadorned meals and has its own research lab to develop product recipes. Its science department has staff who do nothing but think about the genetic cross of wheat and other crops. They asked Jones for his help and he found himself in the valley to break weed and disease cycles between tulips, potatoes, and other crops. They asked Jones for his help and he found himself working with cabbages or pickling cucumbers, typical spices that are popular in the Pacific Northwest, the region where he grew up in a bag that hasn’t been touched since the annual Grain Gathering six months earlier.

The bread’s other life is on the baking side, where Bethony and visiting bakers employ the more subjective and intuitive tools of the trade. “Once you get out of the commodity market, it’s a very freeing experience,” he says. “You could work with all types of wheat—purple wheat, blue wheat, black wheat, and varieties with unique flavors and baking properties. To nail down those flavors and properties and prepare them for life outside the commodity marketplace, he needed to test them, so he started the Bread Lab and hired Jonathan Bethony to bake. In his earlier role, he might be told to bake a certain wheat “much to his dismay.” He needed to test them, so he started the Bread Lab and hired Jonathan Bethony to bake. In his earlier role, he might be told to bake a certain wheat “much to his dismay.”

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The article takes to task a regulatory system that forbids the adulteration of so many other foods while in effect looking the other way at what goes into bread. Anything less than 100 percent juice has to be called a “drink.” But even if you bleach your flour with acetone peroxide, chlorine, or benzoyl peroxide—you can still call it bread. Food and Drug Administration rules also permit shortening, sweeteners, coloring, potassium bromate, refined vital gluten, and ascorbic acid—“the aforementioned ‘yoga mat’ compound used as a dough conditioner. Such additives are largely in service to speed and automation, wrote Jones and Econopouly, with the final product having less taste and extensibility, key elements of a bread’s structure.

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Billions to Be Served

Baked dark, boules and baguettes in the Bread Lab have a rich, complex flavor missing from most breads. 

Courtesy JD McLelland/The Grain Divide.

Opposite: Bread Lab collaborator Chad Robertson has introduced thousands of bakers and diners to the wonders of a naturally leavened loaf. Courtesy Tartine Bakery.

could well lie with the additives in commercial breads, particularly vital gluten. Meanwhile, Italian researchers have shown that gluten can be nearly eliminated as naturally leavened bread develops.

“One hypothesis is that the fermentation process starts kind of digesting the bond, it's breaking down gluten,” Econopouly says one afternoon outside the lab. “It's why you can over-ferment your bread, because you'll have no strength to make a nice loaf.”

Which is where the baker’s hands come in. As a leaf rises, an experienced baker will see and feel changes in the dough’s character and adjust accordingly—cooling it to slow its development and build flavor, or changing its water content for more holes in the crumb. Bethony has experimented with removing a flour’s bran, softening it in water and returning it to the dough, where it is now less likely to slash the dough’s bubbles. Working with a chef in the La Conner schools, he has baked with a white whole wheat that goes undetected by the students. He calls this “stealth health.”

Compared to most bread, even the quasi-artisan breads frozen and reheated in supermarkets, the loaves from the Bread Lab are immensely flavorful. They’re baked dark, making the most of the browning process that can serve up a rich, musty scent that permeates the crumb—the part that’s not crust—as the bread cools. The crumb is moist, with large, glossy, gelatinized holes created by degassing yeast and bacteria. The smell is intense, like fresh cut wood burned by a saw blade.

The challenge now is to get this product into more bakeries, homes, and mouths.

Econopouly studies breeding for yield, adaptability, and improved nutrition and baking quality. Before coming to Mount Vernon, she was a research analyst for the Bill & Melinda Gates Foundation, learning about the challenges faced by small farmers in sub-Saharan Africa as they try to sustain their families and send their children to school. It was a big-picture task, involving agronomics, breeding, food policy, and market access.

The Bread Lab takes a big-picture approach, too, breeding wheat, baking bread, but also exploring ways to make a wholesome loaf a greater part of daily life for a greater number of people.

“One of the problems we come across is how can we get these really beautiful, really nutritious whole wheat breads to more than just the people who can walk to one of these nice bakeries in the city in some hip neighborhood and spend more than $12 on a loaf of bread,” says Econopouly. “I'm not saying these loaves of bread aren't worth $12. I'm saying everyone should be able to have a loaf of bread like that.”

CHAD ROBERTSON HAS DEVOTED his career to perfecting such loaves. People line up outside his bakery in San Francisco’s Mission District to pay $8.25 for one. He has sold tens of thousands of copies of his first cookbook, Tartine Bread. The basic recipe consumes 38 pages.

“With this recipe, some matches, and a knife, you could start a civilization,” says Vogue magazine, which calls Robertson “the cult prince of American breadmaking.”

The core of the recipe is unbaked white flour, with a hint of whole wheat. Last year he put out a book centered on the flavor and aesthetics of whole grains and more diverse grains, like kamut and fermented oatmeal. He did much of his research in Denmark and Sweden, which is seeing a revival of heirloom Nordic grains.

Bread Lab collaborator Chad Robertson has inspired thousands of bakers and diners to the wonders of a naturally leavened loaf. Courtesy Tartine Bakery.
I come home and I would love to have some of these varieties growing in the States and see what happens,” he recalls one day in Bar Tartine, a restaurant around the corner from his Tartine Bakery. “I say that to Steve. That was maybe two years ago and they’re growing it now. I’m going to be able to use some of that stuff.”

Barber, the Blue Hill at Stone Barns chef, worked with Jones to develop his own wheat, a descendant of a Spanish variety named Aragon 03. It’s now growing at the Stone Barns farm in New York after a test plot near the Skagit Valley produced the equivalent of an astounding 156 bushels per acre.

“I would bet that we’re just at the beginning of something that won’t stop,” Barber says by phone one evening. “As people taste this stuff, there’s no way they’re going to settle for anything without the flavors they taste because it blew your mind. To me it’s a no-brainer. That’s what changes everything, flavor.”

This is not your classic bench science. As Jones puts it, while much of the lab’s research is peer-reviewed, it’s not putting out a paper on “the perfect baguette.” It’s more like a large, iterative, community effort in which farmers, millers, bakers, and chefs break bread, giving and taking inspiration to bring it to the larger world. It’s in essence the ethos of cultural change.

The lab’s bread work, says Jones, is as much about the art as it is about the science. “I think that’s really important,” he says. “If Chad Robertson and Marc Vetri and these other chefs and some bakers and Dan Barber worked with the lab’s work they would be teaching chefs how to teach students.”

Christian apocalypticism has a long and varied history. In his 2014 book American Apocalypse: A History of Modern Evangelicalism, Matthew Avery Sutton argues that one of the most prevalent modern apocalyptic thinkers was Woodrow Wilson. The tall, lanky, Georgia-born minister, who was known for his lectures at Princeton and his fiery sermons on the need to rescue the world from Communism, believed that the United States was on the verge of an inevitable apocalypse. Yet he had little sense of the future. And occupy they have.

Unlike so many radical evangelicals of his generation, Matthews saw troubling signs at home and abroad. As European nations armed for war in the 1910s, the minister shifted from premillennialism to postmillennialism. While he had believed in the power of the Social Gospel to bring salvation to the world, he now feared that the world was careening toward an inevitable apocalypse. Yet this growing apocalyptic sensibilities did nothing to curtail his political engagement. He worked closely with community organizers on a variety of issues and he cultivated relationships with state and national leaders, none more important than Woodrow Wilson. Matthews routinely wrote the president with advice and to ask for favors for himself and his friends. He even promised Seattleites that through Wilson he would get congressional peer flowing back to the Pacific Northwest. The president occasionally sought Matthews’s opinions as well. Their correspondence demonstrates that Matthews had the ear of the president and that he had no reservations about speaking boldly to men in power.

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crushed. We do not want peace until they are crushed. We do not want them to break. We want to strike them down. Then he turned to the Bible to justify his strident, uncompromising militarism. “Prophecy is clear on this question,” he insisted. How it was clear he did not say. He concluded his letter by confiding in Wilson that he hoped to “have the privilege of shooting the Kaiser” himself.

World War I represented a major turning point for Matthews and for those like him in the growing premillennial movement. For decades, radical evangelicals had believed that contrary to the claims of creedal conservatives, Social Gospel liberals, and political progressives, human-kind was not improving. Although premillennialists did not necessarily rejoice over the outbreak of war, they could not help but find some satisfaction in international turmoil. As the British promised to establish a homeland for Jews in Palestine and Wilson consolidated power in the executive branch, premillennialists knew beyond any doubt that the beginning of the end had commenced. The global cataclysm signaled to them that they had read prophecy accurately and that they could offer a viable, realistic alternative to the rosy religion of Social Gospel optimists.

While most radical evangelicals believed that the rapture would occur before the unveiling of the Antichrist, they believed that they would see global developments unfolding as the Bible foretold to set the stage for the seven-year, final tribulation. They used the war to promote their gospel and their movement. Their ability to anticipate conflicts around the rapidly changing world with total confidence and to explain their meaning captured the souls of thousands of Americans. At the same time, World War I forced radical evangelicals to reconcile their beliefs about the future with the realities of their obligations to a nation at war. That premillennialism might seem inimical to good citizenship made the faithful politically and socially vulnerable.

2. “Political Notes and Comments,” Seattle Argus, March 1, 1913.
3. M.A. Matthews to Woodrow Wilson, March 8, 1918, folder 12, box 4, accession/972, Mark A. Matthews Papers, Special Collections, University of Washington, Seattle.

Excerpted from AMERICAN APOCALYPSE: A HISTORY OF MODERN EVANGELICALISM by Matthew Avery Sutton, published by The Belknap Press of Harvard University Press. Copyright © 2014 by the President and Fellows of Harvard College. Used by permission. All rights reserved.
in 2002, it echoed what even recent studies show: For many viewers, a credibility gap exists between female and male sportscasters. Through their effort, training, and determination, however, women sportscasters continue to climb the top of their chosen profession, pushing aside questions of credibility and worn-out assumptions about gender and the ability to report on sports.

At WSU's Edward R. Murrow College of Communication, both men and women continue the long tradition of sports broadcasters. From WSU with veteran Laura Dubowski and other faculty training them for the field. For women in particular, that education combined with practical experience prepares them to establish their authority and understanding of sports.

Fans watching the WSU women's basketball game versus Colorado in late January had Brunson’s familiar voice and face on Pac-12 Networks to guide and inform them. She didn’t just sit down and call the game, though. Her work started hours before with writing and research on players.

“We try to make it look as easy as possible,” she says, “but I always have to do homework.” She’s downtown at Beasley Coliseum. Cheers from players and visiting WSU women’s basketball alumni echo faintly down the hallway. The Cougs have just nabbed a come-from-behind victory over the Colorado Buffaloes.

Originally, Brunson was slated to be on the women’s basketball team. She came here to play, earning a partial scholarship, but she was also drawn by the reputation of legendary sportscaster Keith Jackson ’54. Third torn ACL kept her off the court, so Brunson poured her energy into broadcasting, studying to be both on-camera and behind the camera. She also worked on news and other programs at the WSU television station Cable 8, but she really wanted to do sports.

At Murrow we were supposed to take turns on who would do weather and who would do sports and anchor. I was always that one making trades to get that nice sports cast,” she says.

Her effort paid off; first, with an internship in Spokane under then-KIRO sports director Dan Kleckner, followed by a job as weekend sports anchor and weekday news reporter at Portland’s ABC affiliate. A year later, Brunson headed east to work at ESPN, where she spent 13 years as weekday news reporter at Portland’s ABC affiliate. At the time, Gardner, then Gayle Grannock, was a production manager and a SportsCenter anchor. The transition surprised her.

“I was used to being the only girl who might have known Alex Rodriguez’s batting average in the local newsroom, but I live to be the only girl in a room of 150 colleagues was a little jarring,” says Brunson. On the color bars: “fellow anchor” Linda Cohn and I never had to wait to use the ladies room,” she says.

Despite the gender imbalance, ESPN staff cared more about who wanted to do sports and anchor. The transition surprised her. “I was used to being the only girl who might have known Alex Rodriguez’s batting average in the local newsroom, but I live to be the only girl in a room of 150 colleagues was a little jarring,” says Brunson. On the color bars: “fellow anchor” Linda Cohn and I never had to wait to use the ladies room,” she says.

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She had to break into being on the air—the she was very pretty and she could write—and then she had to convince the news director to give her a chance. From Sunday football, that’s how she started, says Dubowski. Gardner also became the first woman to do televised play-by-play for a major league baseball game, calling a Cleveland Indians-Cincinnati Reds game in 1993.

Dubowski now teaches broadcasting students at WSU, including some sports reporting class, where she dips into her long experience in the television field. She didn’t make it onto the football field herself, though. When NBC had football games in Boston, they’d get a crew from WRGB and Dubowski would volunteer. I always wanted to be on the field, but it was very feet tall and I was ended up with the broadcasters in the booth.

She did end up working some in sports broadcasting when she went to CBS and helped produce the 1998 Olympics in Nagano, Japan.

Dubowski grew up a sports fan, following the Boston Celtics in her native Massachusetts. She also has a long admiration for sports writing, calling it ‘some of the best writing around. They still have the luxury to just let it go.’

Dubowski says the situation for women sports broadcasters and writers seems to be improving, at least beyond the locker room access controversies detailed by sportswriter Susan Fornoff, who wrote in her 1993 book Lady in the Locker Room, ‘The road to acceptance for women is lined with the men declaring, ‘We don’t want you here.’ When the women respond, ‘Too bad, I’m here,’ then the tests are over. The men have to show that they’re ready to compete.’

There are a lot of high profile women in sports who are doing it now. It’s a culture shock,” she says.

Brunson, but all three credit their success to education, access to coursework, and theWSM 2015. “The culture of Alaska also lends itself to opportunity for women, says Brunson. ‘In Alaska, the fan base is very happy to have women in sports. We get told the fans like us more than the boys,’” she says.

She also reported on the Native Eskimo-Indian Olympic games , which took a lot of study. “There are these games you’ve never heard of and it’s a culture shock with machines competition with racers traveling 60 to 80 miles per hour along the machine competition. O’Donnell also covers the Iron Dog Race, a snow dogs, and the course. O’Donnell also covers the Iron Dog Race, a snow dogs, and the course. O’Donnell also covers the Iron Dog Race, a snow dogs, and the course. O’Donnell also covers the Iron Dog Race, a snow dogs, and the course. O’Donnell also covers the Iron Dog Race, a snow dogs, and the course. O’Donnell also covers the Iron Dog Race, a snow dogs, and the course.
Three Great Ways to Belong to One Great Organization.

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

New: Platinum Life Membership.

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

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

CLASS NOTES

1940s
Edward "Mike" Restor ('48 Phys. Ed.) a WWII veteran, was presented with the Knight of the Legion of Honor, France's highest military award for his contribution to France's liberation in the war.

1960s
Richard H. Miller ('64 Bus. Ad.) retired after 20 years of service as the vice president and chief financial officer at a renowned medical supply company.

Steve Montgomery ('66 Comm.) was honored with the Life Achievement Award and the annual media award by H1 Unlimited for his public relations and broadcasting work in unlimited hydroplane racing.

Stan Albrecht ('68 MA, '70 PhD Ed.) was the first Utah State University president named to the USU Athletics Hall of Fame.

1970s
Karen Childress-Evans ('71 Ed.D.) retired as director of visual and performing arts for the San Diego Unified School District.

Bradley Carlson ('77 Comm.) was appointed president and general manager of Downtown Memorial Gardens Cemetery by Riverview Bancorp, Inc.

Michael Hubbard ('77 MBA) has been appointed to the Board of Directors of the Long Beach, California, treasurer. This is her second term.

Edward "Mike" Restor ('48 Phys. Ed.) retired after 20 years of service as the vice president and chief financial officer at a renowned medical supply company.

Steve Montgomery ('66 Comm.) was honored with the Life Achievement Award and the annual media award by H1 Unlimited for his public relations and broadcasting work in unlimited hydroplane racing.

Stan Albrecht ('68 MA, '70 PhD Ed.) was the first Utah State University president named to the USU Athletics Hall of Fame.

1980s
Howard Copps '57

From houseboy to husband

by Richard H. Miller

Howard Copps ('57 Civil Engineering) was an early worker in the field of digital video. As the COO of a 17-year-old digital video tools company, Telecine, he was already recognized by a German magazine of the time as the "Best Houseboy in Europe." His job was to light the candles. And set the tables. And serve the food twice a day.

In 1953, being a houseboy at a sorority was a plum post. "I put myself through college for three years doing that," Howard Copps ('57 Civil Engineering) says, sipping a beer during a recent Pullman pep rally. "That was back when tuition was $65 a semester." He could have worked there for four years. But Martha Putnam came along. It was a full day. Howard was in Alpha Gamma Delta, wearing the requisite waitstaff blazer and slacks, serving a meal to 60-some sorority women under the watchful eye of the coach when he saw Martha. He wanted to ask her on a date. He needed to ask her on a date. "There was a rule that houseboys couldn’t date women in the sorority," Martha said. "When he asked me out, the housemother said ‘You have to choose between dating an Alpha Gam and keeping your job here.’"

Howard quit. Their first date? "I’m not sure where we went," says Martha. "It was a long time ago. Probably The Cougar or a movie. The Cougar was only a plum post." Howard found a houseboy job at a different sorority and kept seeing Martha. They married two years later, and Martha left college. Not finishing her business degree is one of her few regrets. "I made sure our two children graduated," she says.

The Copps stayed in Pullman. Howard became a professor of civil engineering at WSU. He specialized in hydraulic engineering and represented the University on hydrology and water quality planning committees in the Columbia River Basin. He was also part of the first team behind the Washington Higher Education Telecommunication System, which helped branch campuses stay in touch with the main campus and laid the groundwork for WSU’s online degree programs.

Martha worked for several WSP departments, including Campus and Community Relations, where she helped plan the first Lentil Festival in 1989 and organized the celebration for the first-day issue of the Edward R. Murrow commemorative stamp.

The Copps retired in 1996 and just celebrated their 50th anniversary.

All those years ago, when Martha first saw Howard, did she think his houseboy skills would translate into husband skills? "Not at the time," she says. "But they did."

Howard Copps '57
Elaine Thomas 76

When she came to WSU, Thomas initially planned on being a music major. After returning some course from college after her freshman year, she spent some time with a neighbor, who was chief metallurgist at Battelle before joining Atlas Foundry. The Tacoma-based company, which later became part of Bradcan, makes high quality, high specification products. According to her mentors, Thomas is a top notch metallurgist in the steel casting industry where she developed procedures and processes for sophisticated steel castings. Bradcan-Tacoma is one of the few foundries in the world that is engineering fields but settled on metallurgy and changed her major that fall. “This was something I could do,” she said. “I didn’t involve working under the hood of a car or standing out in the rain. It was about using your mind instead of your brawn.”

Her metallurgy major only included four students, and they struggled through their difficult classes together. She sometimes studied with the handful of women who were taking engineering and science classes at that time. Her professors, including Servet Duran and Bruce Masson, were supportive of her efforts.

Shortly after graduation, she went to work at Battelle before joining Atlas Foundry. The work that she has done to modify specs and has seen the number of women in materials engineering grow. “I never would have thought that I could do that, and I never would have thought that women could do that.”

Over the years, the worksite wasn’t always friendly to women, and Thomas suffered plenty of indignities. “I have been very fortunate to have worked with the top people in materials engineering in the world. The SFSA group is primarily men and a handful of incredible women. They are the nicest people on earth,” says Thomas. “I have been very fortunate to deal with brilliant minds in this industry.” She’s looking forward to “getting a scholarship provide support and guidance for the next generation of young men and women.”

“It’s important to me to help other people,” she says. “It’s paying it forward, which I love.”

Elaine Thomas. Courtesy Bradcan-Alfas

metals is used around the world. Her work led to the Briggs medal from SFSA, which is almost entirely made up of men. She says she feels privileged to have worked with the top people in materials engineering in the world.

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Elaine Thomas. Courtesy Bradcan-Alfas

The Clark Family

Pets, vets, and architects

by Larry Clark '94

— Lew and Alma Clark opened the doors to their veterinary clinic, the Clark Pet Clinic, in 1961, when Kirkland was a quiet town and it wasn’t a surprise to see a home or cow as a patient. Now Lew and Alma’s son, Michael Clark ’80, DVM, sees the descendents of their first patients in a building designed by his architect brother Jeff ’80 and opened to the public in 1993, on the original site overlooking Lake Washington. When Lew Clark ’56 DVM, who passed away in 2008, came to Kirkland with the family, he probably couldn’t anticipate the growth of the area or the role he would take in community icon. Judy Clark ’78, MA, Michael’s wife and manager of the Saxonia Bay Veterinary Hospital, remembered Doctor Clark as her family’s vet when she was five.

“Used to walk by there to swim in the lake,” she says. “Today, old clients, know the history of the place. It’s definitely part of the community.”

Alma Clark, who studied fine arts at WSU, worked in the veterinary assistant in the hospital as the boys grew up. They lived the first five years in the temporary clinic, building a loyal clientele. They opened a new building on the site in 1970.

“My mother-in-law talks about the time she woke up and looked out her window, and there’s this guy on his horse asking if the dog is in,” says Judi. “She and Michael started seeing each other in high school and have been together for 40 years.”

Michael and Judi, then Jeff, followed Alma Lew and Alma to Pullman and WSU. The brothers were in the Sigma Nu fraternity. Judi pledged at the Gamma Phi sorority. While Michael worked on his veterinary degree, Judi taught early childhood development classes as a faculty member at the University. Jeff met and married Sharon 38, an art major. Juda, Judi and the Gamma Phi alumni, were a school fixture.

Jeff and Michael returned to Kirkland, when Lew opened a second veterinary clinic. Michael had the practice at that second location. When his dad was getting ready to retire, Michael bought the hospital in 2005 and renamed it Saxonia Bay Veterinary Hospital. While Michael worked on his veterinary degree, Judi taught early childhood development classes as a faculty member at the University. Jeff met and married Sharon 38, an art major. Juda, Judi and the Gamma Phi alumni, were a school fixture.

Jeff followed a different path into architecture. “Michael and I both worked in the very
hospital from the time we were 12,” he says. “Jeff and Michael’s paths converged at Hamita Bay two years ago. Michael’s practice was growing along with the need for a new facility as the 1969 building aged. “The facility was getting tired. We kept trying to remodel it, but it made no sense,” says Jeff. Using his knowledge of veterinary and medical architecture, Jeff designed a new building on the same property as the old clinic. They

“one of my dad’s friends found me and thought I might know more about veterinary facilities than anybody else in the area,” says Jeff. With his enthusiasm for architecture, Jeff joined the firm Architectural Werks in 1983, where he is now president and a principal. Although Jeff’s work has covered a variety of commercial areas, one specialty is in animal health facilities. His family background serendipitously led him to his architectural work in veterinary medicine.

“his family background serendipitously led him to his architectural work in veterinary medicine.”
decided to do something different, though, with the veterinary hospital on the first floor and the architecture offices on the second. Early in the process, they didn’t even have a plan.

“When we started, we had a dinner and asked people what we should be doing to bring in the stakeholder side,” says Judi. But they kept moving ahead with the plan.

The building opened up the veterinary practice and allowed them to double the staff and the number of operating rooms.

Sunlight pours into the waiting room and high-ceilinged exam rooms. Patients can even see through the trees to Juanita Bay. The dogs really enjoy that, says Judi. “Outside between the trees and the half-doors. Dogs don’t close in and we rarely hear the defensive bark.”

The staff show materials to clients.

“In Jeff’s office, photos of classic cars cover the walls. Plenty of natural light from sunroom windows, a glass wall in the teaching lab, and his staff show materials to clients.

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WSU alumni serving as microbiologists in the U.S. Navy

Capt. Marshall Montville ‘03 PhD, executive officer at NMU-East Asia (Singapore)

Cmdr. Matthew Down ‘97 MS, Duty Under Instruction at Penn State University

Lt. Cmdr. Brent House ‘03 PhD, lab director at the Naval Medical Center in San Diego

Lt. Kimberly Edged ‘92, Naval Medical Research Center, Silver Spring, Maryland (working in malaria)

Lt. Robert V. Gerbasi ‘90, NMU-East Asia (working in malaria and deployed to Liberia)

Lt. Rebecca Pavlek ‘03, NMU-East Asia (Singapore)

View the President’s press conference about the Ebola response on C-Span


Lt. Kimberly Edged ‘92, Naval Medical Research Center, Silver Spring, Maryland (working in malaria)

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View the President’s press conference about the Ebola response on C-Span

Famed news broadcaster Edward R. Murrow discovered a world of possibilities at Washington State University.

Here he was inspired to excel in the classroom, broaden his world view, and hone his speaking skills. That created the foundation for a 25-year career in which Murrow’s name became synonymous with personal courage, integrity, and an unending quest for truth.

A bold approach? Definitely. But, after all, you’ve counted on us to give voice to the underdog since 1890. And you always can.

The sheer volume of stories speaks to Waits’s dedication to the historic event and adds a significant piece to the literature and study of St. Helens’s eruption 75 years ago. These wrenching, terrifying stories of hot ash, mud flows, and panic carry the reader into the thick of the action. For example, Jim Szymanski, a logger twelve and a half miles from the volcano, told Waits:

“Then up in the trees I saw the top of a tall one jiggle and fall, and another nearer, then another. Rocks zinged through the woods, bouncing off trees… It grew louder, like a giant locomotive, or like ocean waves but very loud... Suddenly I could see nothing. I’d been knocked down and my head had blown off. I got hot right away, then scorching hot and impossible to breathe. The air had no oxygen, like being trapped underwater.”

In the Path of Destruction: Eyewitness Chronicles of Mount St. Helens by Richard Waitt. WSU Press, 2016. Review by Tim Stuury—There was a time, it’s been recalled, when each home in Roslyn had three pictures on its wall of Jesus, FDR, and John L. Lewis, the powerful head of the United Mine Workers of America, or UMWA. But labor conflicts in the coal-mining town during the 1930s would severely strain and replace the allegiances reflected by the latter two. In Coal Wars, David Bullock recounts the bitter struggle in 1933-34 between the UMWA and the more radical Western Miners Union in the mining communities of Roslyn, Cle Elum, and Ronald.

Coal production in the area hit a high of 1.8 million tons in 1920, the year Herman and Anna Swanson moved to Roslyn. Swedish immigrants, the Swansons were the author’s grandparents.

“Washington was the second-largest coal-producing state in the West during the first third of the century,” writes Bullock. “And the Roslyn coal field was the largest single coal-producing region in the state, generating 40 to 50 percent of the state’s annual coal yield during that era.”

Coal Wars: Unions, Strikes, and Violence in Depression-Era Central Washington by David Bullock. WSU Press, 2014. Review by Tim Stuury. Following the establishment of the region’s first mine in 1886 by the Northern Pacific Railroad, the Northern Improvement Company eventually established nine major shifts in the Roslyn-Cle Elum area. Roslyn’s population peaked at nearly 4,000 at the height of production, but by the early 1930s, its population and economy had steadily declined.

A shrinking market for coal and the shadow of the Great Depression led the Washington industry to reflect the struggles of the larger coal producing area back east. The major industrial component of the National Coal Recovery Administration, established protections for workers to join unions of their own choosing. A result of the legislation was to accelerate the number of work stoppages nationwide, which doubled from 841 in 1932 to 1,695 in 1933:

Although the Washington legislature actually passed a law forbidding the use of machines in the mines, it was soon overturned. This disappointment, along with no progress toward shorter hours and corresponding cuts in wages, exacerbated the miners' unrest. Disillusion with the ineffectiveness of the WUM led to the eventual formation of the UMW led to the eventual formation of the UMW.

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This is the beginning of the story of Michael Kirkpatrick '01. He's a troubadour, both self-described and according to the 2014 Telluride Troubadour Competition, which he won. Performing some 150 dates a year from his Fort Collins, Colorado, base, he writes his own tunes and for the most part plays all the instruments. His eighth album, Key to My Cage, which he also produced and recorded, has him playing mandolins, guitars, harmonica, lap steel, percussion, and tape echo, with accompaniment on just four of the 11 tracks.

They're all supporting characters. The voice—deep, resonant, confident, and gravelly—is the star as he ranges over songs about nature, love, and personal reflection. “Come Back Home to Me” brings them all together in vigorous, joyful tribute to singing from the heart.

The Awakening for Allen Johnson '95 PhD

SKYHORSE PUBLISHING, 2014

Review by Kathryn Ovals '15

Jazz awakens viewers—effortlessly through time, from the battle-scarred streets of Spain in 1936 to nearly 70 years later as it tells the life story of Diego Garcia and his descendants.

In this unconventional romance novel, Diego Garcia dropped everything to be with the Moroccan beauty of his dreams, Lupa. The two newlyweds headed to Granada, Spain, to start a life of their own in the 1930s. The two loved each other immensely, and where there is love there is compassion. The story looks forward almost 80 years to Diego’s granddaughter, Lupita, a young physician. Diego is now a Spanish Civil War veteran with an enduring desire to save people in honor of the ones he couldn’t protect in the war.

In 1990, Diego stumbles upon an unconscious American man lying helplessly in the road. The man is in critical condition, and is too battered to survive the ride to the hospital. Diego doesn’t have the heart to leave him behind, so he brings him to his home where he lives with Lupita. She takes care of the man as he lays in a restless coma, and the young doctor wonders what he could possibly be reliving in his agitated dreams.

The man awakens with amnesia, and spends the next four months trying to recall what happened to him, but some things are better left unknown. As the story unfolds Diego, Lupita, and the beaten man, whom they named Antonio, journey together in a story of life, love, and redemption. Weaving through the life of Diego Garcia, the author brilliantly illustrates the restorative power of time.

Johnson graduated from WSU in 1985 with a degree in music education, and has published several books.

INSPIRING

ACHIEVEMENT

Honors student Bree Berg discovered a world of possibilities at Washington State University. Here the biochemistry major was inspired to excel in the classroom, immerse herself in prostate cancer research, and tutor dozens of classmates. Joining a medical mission trip abroad is on her to-do list. Recently, the future medical practitioner was one of just 10 students nationwide selected for the Bardos science award, recognizing exceptional prospective scientists.

A bold approach? Definitely. But, after all, you’ve counted on us to inspire the next generation of problem-solvers since 1890. And you always can.
Why did people invent movies?

Movies not only took the ideas and inventions of people, but also the work of a horse. Her name was Sallie Gardner and the debate of her day was whether or not horses ever had all four hooves off the ground during a gallop.

The human eye moved too slowly to see what was going on with horses’ hooves, so in 1872, the governor of California hired photographer Eadweard Muybridge to find out.

Muybridge set up big cameras around a track to capture Sallie Gardner in motion. He discovered in one of the photos that, for a moment, she was in mid-air.

Now, Muybridge not only had the answer, but also a whole series of Sallie Gardner photos to work with in his studies. He placed her photos around the edge of a glass plate that was divided up into sections like a pizza, a different picture on each slice.

Then, Muybridge used what he knew about theories from Greek mathematicians and physicists to build a new movie machine called a zoopraxiscope. With a crank and a light source, he could spin the disc and project a moving picture onto the wall.

My friend Jon Hegglund is an English professor at Washington State University who studies movies and how people tell stories. He said kids in the Victorian era even played with zoetropes, toys that looked like a hollow drum with several vertical slits around the outside. When the drum spun quickly, the viewer could see pictures drawn on the inside start to move.

“Partly, people invented movies because they could join the technology of photography with an interest in seeing pictures move,” says Hegglund. The history of movies has a lot of inventions that end in “trope” (to turn) and “scope” (to see).

Michael P. Allen researched films at Washington State University. He told me it took both inventors and dreamers to create the movies we have today, but Thomas Edison engineered the pieces that brought it all together. “Edison’s first films were very short clips of boxing matches, dancing, and acrobats that could be viewed by a person looking into a viewing machine called the kinetoscope,” Allen says.

He explained how the world began to change dramatically when the two Lumière brothers made the first motion picture people could watch on the big screen. They rented a room in a Paris café basement and people could watch a 15-minute movie for just a few cents.

“In any case, the answer to the question is money,” Allen says. “Films may be art, but they take money to make and they are made to make money.”

This summer, you can create a movie or flipbook and let me know if there are other reasons why you invented it. If cats like me could time travel, maybe we could get answers from the inventors themselves. Until then, I’ll leave the history of movies to the experts and ideas of time traveling to the moviemakers.

Sincerely,
Dr. Universe

Images iconic and intimate

The WSU Museum of Art’s winter exhibit, “Through the Lens, an American Century: Corbis and Vivian Maier,” showcased 32 of the nation’s most iconic photographs from the Corbis collection, along with 50 images taken by Vivian Maier—an artist whose work wasn’t discovered until after her death.

The exhibit also included work from photography students at WSU and colleges across the nation. The students took the idea of social realism and urban photography and produced contemporary photographs to help bridge the Corbis and Maier exhibits.

The student photography project, Hidden in Public View: Exploring Urban Photography and Social Realism, can be viewed online at hiddeninpublicview.org.
WASHINGTON STATE UNIVERSITY?

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