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About 650 years ago, inhabitants of a large plank house on Galiano Island abandoned it for unknown reasons. But not before they feasted on 10,000 sea urchins. *by Tim Steury*

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Over nine short weeks this summer, undergraduate Laurel Graves helped develop one of the first research projects to measure how much carbon wheat consumes and releases. "The entire world, all 7 billion people," she says, "and we're the only ones doing this thing. It's kind of a crazy thought." *by Eric Sorensen*

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Cover photo: Laurel Graves measures light in a wheat canopy in one of dozens of projects involving undergraduate researchers. *By Zach Mazur*

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BECAUSE THE WORLD NEEDS BIG IDEAS

first words

Maps, memory, and imagination :: We recently received from alumni authors two very different, but similarly themed and equally enjoyable, provocative books.

The Map of Lost Memories, by Kim Fay '88, is a gripping and intricate tale of a young woman treasure hunter in Cambodia. Besides its graceful prose, the novel offers an absorbing education on the mysteries of the Khmer people and the cultural cross-fertilization, and corresponding misunderstanding, of mid-1920s Southeast Asia.

The other is *In the Memory of the Map: A Cartographic Memoir*, by Christopher Norment '82 MS. I generally find memoirs of living people tedious and embarrassing. But Norment has written a refreshing recollection of his life as inspired and organized by maps, starting with the free filling station maps he collected as a kid and moving deliberately toward an allegorical "trip without a map" through the Pasayten Wilderness of the North Cascades.

Presumably coincidental in their similar titles, the books nevertheless evoke the aspirations, dreams, and metaphors invested in maps as well as suggest interpretations of the maps contained in this issue.

As simple as it seems on the surface, the map on [page 44](#) of northeastern Washington and the Colville reservation contains layers of memory and meaning, both cultural and political.

Technically not a map, the satellite photo of British Columbia's Gulf Islands both inspires adventure in a place so near and yet so unfamiliar to many of us and suggests environmental influences and relationships in a people who have only tentatively revealed themselves.

In discussing the power of maps to inspire the imagination, Norment recalls another writer's observation that maps are a frequent feature of children's books. What would *Winnie-the-Pooh* or *Lord of the Rings* be without maps? And the map in *Treasure Island* creates "a space precisely the size of a boy's imagination."

Referring to yet another book about maps, this one outside our WSU parameters, a recent commentator discusses the early cartographer Ptolemy's *Geography* as an "attempt to take myths out of maps." Whether or not Ptolemy was successful, I suggest the campus master plan on [page 17](#), a yet different kind of map, might benefit from injecting some mythologizing of another sort, thus exciting the imagination. Such a map might more strongly require certain questions of us: "Where might we end up?" and, "What must we do to reach this place?"

Such musing also recalls a book, reviewed in a previous issue, that should be appreciated for its allegorical value as much as its information. Marty Mullen, who served for over 30 years in arts programming and student affairs, has compiled in her *Reflections on the Road* what surely is the most comprehensive mapping, geographical and historical, of this place where she lives, a value that could well be reaffirmed by our land grant university.

Norment observes that other than the occasional blank spot, there are few unmapped places left on Earth. Except, that is, for what George Eliot called the "unmapped country within us." Which, I might add, must affect the eventual mapping of that wilderness we call the future.

And that suggests a yet very different, metaphorical kind of mapping. A sociologist, a philosopher, a geologist, and a political scientist have in their "Ethics of Climate Change" transcended the pointless arguing over climate change's existence and attempted to chart the unknown course of the ethical implications of a world in flux.

Tim Steury, Editor



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.

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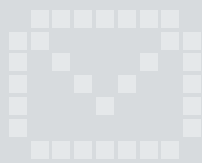
CREATING A CLEAN TECHNOLOGY FUTURE WHERE FARMS HELP COOL THE PLANET

Imagine a future where farms routinely pull carbon dioxide from the air and store carbon in the soil to help deflate the greenhouse effect. Research at WSU is helping us reach that goal. In fact, the University is a leader in sustainable agriculture research, steering us toward an enduring and abundant harvest of the fruits of the earth...while preserving our planet.

It's a big job. But the world needs big ideas.



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posts

William Julius Wilson

We were thrilled to read the article "Race, Class, and William Julius Wilson's World of Opportunity" in the Fall 2012 issue of *Washington State Magazine*. Many may not realize that Dr. Wilson got his start at Washington State University and to hear him describe his choice to attend WSU as "the greatest decision he ever made" is an inspiration.

Unfortunately, the article did not mention that the university has named a national award after Dr. Wilson. The William Julius Wilson Award for the Advancement for Social Justice is bestowed upon those who follow in Dr. Wilson's footsteps by making innovative contributions to promote social policy and raising the public's awareness of systemic social inequality, poverty, and the complex relationship between individual choice and social surrounding. Dr. Wilson was the first recipient in 2009 and the 2011 recipient was David Simon, co-creator of the HBO series *The Wire*, the program mentioned in the article.

Members of the university's Wilson award committee:

Dr. Gregory Hooks, Dr. Julie A. Kmec, Dr. Lisa J. McIntyre, Dr. Jim F. Short, Department of Sociology, Dr. Rebecca M. Craft, Department of Psychology, Dr. Mary Sánchez Lanier, Assistant Vice Provost and Associate Dean, University College, Dr. Alexis S. Tan, Communication and Faculty Diversity Fellow, Office of the Provost

For more information on the award, contact committee chair, Julie Kmec

(jkmec@wsu.edu) or go to the award website: wjwsymposium.wsu.edu. Please watch for an announcement of the next nominee for the award.

Home

According to *Washington State University's International Programs*, more than 700 WSU students travel abroad every year to attend classes, engage in service learning, or participate in internships. As our summer intern Kaitlin Gillespie discovered, that experience can be profound and transformative.

The first time I stepped foot in North Africa, I was on the verge of crying.

As excited as I was to start my study abroad adventure, the previous 36 hours had featured the following: A flight cancellation due to snow, an emotional six-hour layover in Frankfurt International, and finally, the prospect of getting in a car with someone I didn't know in a country I'd never been to for a long drive to Marrakech. I was a wreck.

It did not occur to me that maybe everything would be OK. Maybe, just maybe, I was not the only one who struggled when she first left the country. I mean, it's not like I was one of more than 600 WSU students who studied abroad last year. Surely all of them had arrived in their respective countries, perfectly coiffed after hours on a plane, foreign languages tumbling out of them effortlessly, no hiccups or delays in the plan at all. Nope. Clearly I was the only WSU student who had ever encountered a single

Kaitlin Gillespie was an intern for *Washington State Magazine* for the 2012 summer semester and now is editor of the *Daily Evergreen* for 2012-13. Read more about her Moroccan travels at wsm.wsu.edu/coordinates



problem studying abroad.

The second time I stepped foot in North Africa, I was on the verge of crying.

I was home.

I was home in my beautiful, beloved Morocco after ten days traveling around France by myself, which despite its Western comforts, seemed much more foreign to me than Morocco. The smells were off. The streets were too clean. The French was too pristine, untouched by Arabic influences. No, Morocco and its quirks had absolutely become my home.

The WSU Education Abroad office was my gateway to the world. Studying abroad is considered the "gold standard" toward meeting WSU's goal to graduate all students with a set of global competencies, says Global Learning Director Christine Oakley.

I was far from the only one to find out, and more people are finding out than ever. During the 2010 to 2011 school year, 722 students traveled across the planet, 29 percent more than three years previously. And with hundreds of programs in 70 countries around the world, my options were dizzying. I could have gone anywhere in the world; and without a doubt, after hours of flipping through study abroad catalogues, I made the right choice.

I found myself drinking tea with people I'd just met, talking about world travel and the differences

between Morocco and America. I tickled children in shops, speaking to them in the handful of Arabic words I knew and watching them cry when my friends and I had to leave. I'd woken to the call to prayer at sunrise on more than one occasion, listening to the hauntingly beautiful sounds ringing out from mosques across the city. I wandered through souks and markets, tasting olives and tiptoeing through the water and animal blood that flowed freely through the winding corridors. I ate camel in a back alley, then experienced it again once or nine times coming back up. I'd later accidentally kick a camel in the teeth in the Sahara Desert. I didn't feel guilty for long.

These were the things that made me feel like I was not just a tourist, like I somehow belonged there. Maybe, just maybe, I was a Moroccan. Pullman is home. It always will be. But so will Meknes, and until I can return, there will always be a little part of me homesick for Morocco. Everything can change in three and a half months. If studying abroad has taught me anything, it's that a patient eye and an open mind can find home anywhere.

Kaitlin Gillespie '13

Heart Mountain, Later

My father worked for the Bonneville Power Administration and in 1949 we lived in the Heart Mountain Internment camp. BPA used a portion of the camp to house personnel working on the power lines being constructed from Canada. It was one of the coldest

winters of the 20th century. We were bussed to school in Powell 20 miles to the north and missed many days when snow drifts blocked the roads. I have photos of my brother and me outside our apartment in one of the converted barracks. It was an interesting year. I remember many of the BPA families living there raised vegetables in the farm plots previously used by the Japanese internees. Most of the camp was in disrepair. I had to be taken to the hospital in Powell after stepping on a rusty nail while playing in one of the many piles of debris.

John Williams

Getting our Swallowtails Straight

I love the cover of the Fall 2012 *Washington State Magazine* and the article "Life Histories: The Butterflies of Cascadia." However, I wondered if I would get a free book (*Life Histories of Cascadia Butterflies*) if I spotted the error? The cover butterfly is misidentified. I believe that it is an Anise Swallowtail, not a Western Tiger Swallowtail. The Western Tiger Swallowtail is the butterfly on the first page of the article (page 39). I have had the great good fortune to see both of these butterflies this summer in western Oregon with the North American Butterfly Association's Eugene/Springfield chapter. David James gave a presentation to our group about the book in April 2010 and we eagerly awaited its publication.

Alison Dunlap Center '88 MS

The cover photo of the Fall 2012 WSM indicates that the butterflies are Western Tiger Swallowtail. They are actually *Papilio zelicaon*, the Anise Swallowtail. Both of the upper and lower sides of the wings are black. *Papilio rutulus*, the Western Tiger Swallowtail, actually is yellow with black stripes on the upper wing. I have made the same mistake in the past. I posted pictures of an Anise on Project Noah and called it a Western Tiger, which received a quick correction.

Alayna Huter '01 DVM

What's new? ▾



PHOTO BY JACASSE/JACASSE PHOTOGRAPHY, COURTESY LMN

The **WSU College of Nursing** moved into its new 87,500-square-foot building on the Spokane Riverpoint Campus three years ago. The site has allowed the college to expand its programs, among them the Doctor of Nursing Practice (DNP), which welcomed its first students in August.

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video

Travels with Garrison—The gig of a lifetime. WSU music instructor and player of fiddle, mandolin, and guitar Richard Kriehn travels with Garrison Keillor's A Prairie Home Companion radio roadshow as a musician. Watch a video of his experiences and how he applies what he learns to his teaching at WSU. wsm.wsu.edu/extra/kriehn

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Seattle, #WSU researchers, push back against #Stanford #organicsstudy <http://bit.ly/01z1vW> via @crosscut

Dogs and treadmills. Yep, it happens. <http://bit.ly/MAGFhj> via @seattletimes

#WSU's Bose: Power demand in India outstrips local supply "and building new infrastructure is a huge issue." <http://bit.ly/OBR9NR>



Fueling Big Ideas

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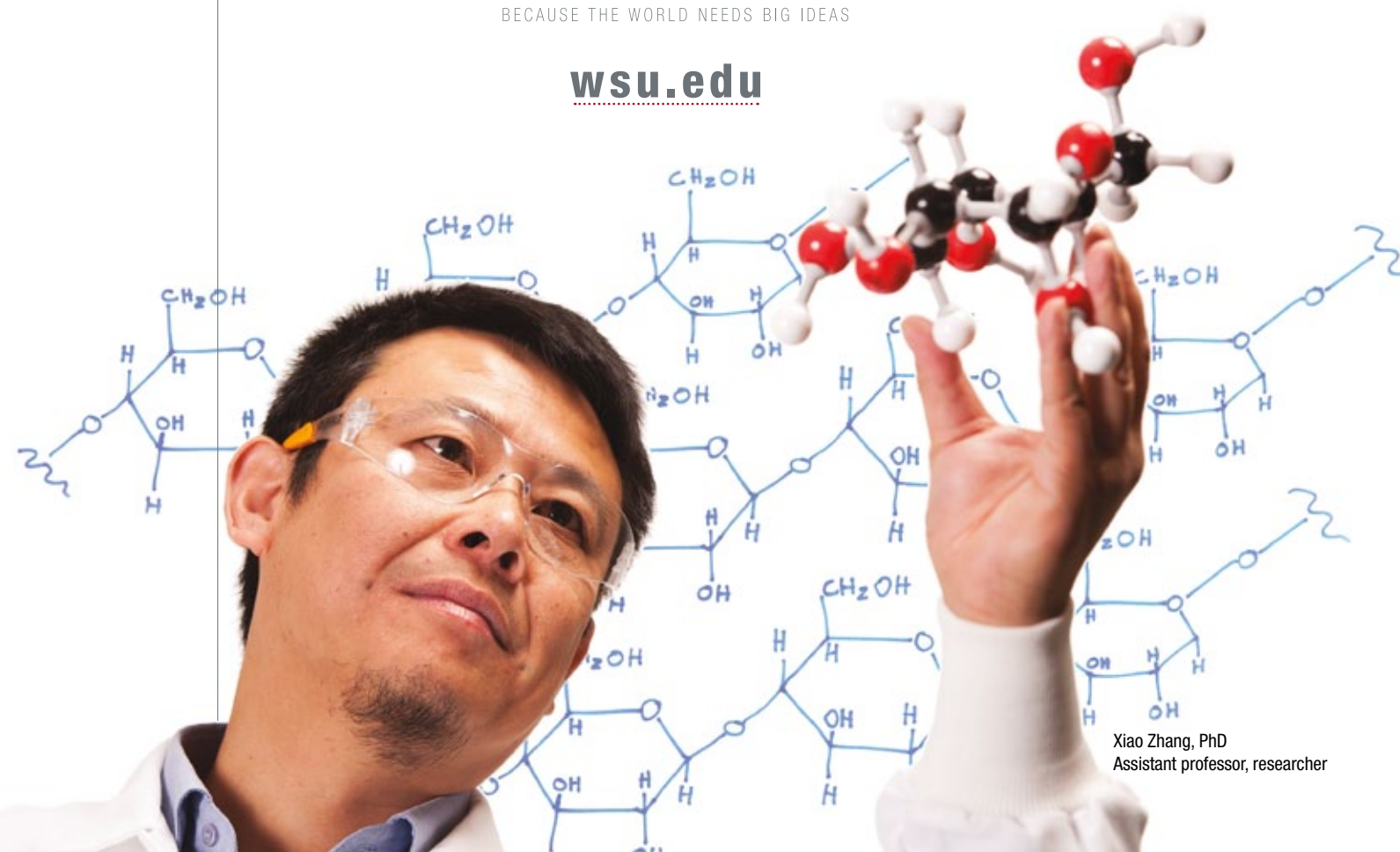
When jetliners routinely fly coast to coast on fuel derived from sticks, branches, and bark left on the forest floor, we'll have pioneer researchers like WSU's Xiao Zhang to thank. Dr. Zhang, a leading expert in converting non-food woody biomass to biofuel, is working hard to make the process cost-effective and sustainable.

It's all part of our search for a clean, renewable energy future—here in Washington state... and beyond.

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Xiao Zhang, PhD
Assistant professor, researcher

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SCULPTURE/PHOTO LUKE TUDOR/ZOMBIEWORM



More energy (and other stuff) from wood

by *Eric Sorensen* :: Few materials have been as kind to civilization as wood.

It made possible some of our most revolutionary technologies: the spear, fire, the wheel, the house, the ship. Hunting, cooking, shelter, transportation, all got big assists because wood was abundant, changeable, sturdy, and packed with energy.

WSU researchers are now trying to wring a whole new suite of uses from wood, including jet fuel and alternatives to other petroleum-based products. They have millions of tons of raw material at their disposal in logging residues across the Northwest. Leading the Northwest Advanced Renewables Alliance, a consortium of universities, government labs, and industry, they have \$40 million in federal funding.

If things go right, they'll lead the way to a new source of liquid fuel that can be

domestically produced without displacing food production or contributing to global warming. All from sticks that are currently left on the ground or burned in giant slash piles.

Now come the hard parts. Wood, for all its elegance and obvious utility, is very complicated stuff. It's made of three "very different polymeric materials"—cellulose, hemicellulose, and lignin, explains Mike Wolcott, a materials engineer and NARA co-project director, and they interact at a small, hard-to-study nano-scale.

"The real difficulty in understanding these things is these systems are kind of a black box," he says.

Which brings us to what scientists call "biomass recalcitrance." Science and industry want to break wood apart so enzymes can be let loose on the wood's cellulose and hemicellulose. The enzymes will detangle their

long molecules, producing sugars than can be fermented to make fuel.

"We're just after the sugar," says Wolcott.

Wood's glue-like lignin prevents this, a testament to the material's time-honored resistance to rot. But if scientists can find a way to get around lignin's resistance, the energy world will beat a path to their door.

Birgitte Ahring, a WSU Tri-Cities microbiologist and director of the Center for Bioproducts and Bioenergy, has a promising "wet explosion" process that breaks down wood with steam, a sudden release of pressure, and oxidation that lets sugars be released by enzymes. She and colleagues recently reported getting the highest sugar yield yet from loblolly pine, a soft wood with some of the challenges of the Northwest's Douglas fir.

"Biomass is like beautiful steak," she says, "but it has cellophane on top of it. So now we remove the cellophane so you're into the juicy steak."

» panoramas

But finding a better way to get energy from wood will fix only part of the problem. Fuel, particularly the aviation biofuel craved by commercial carriers and the military, garners lots of attention, but in commercial terms, it's not the best bang for the buck.

"People have been screwing around with lignin forever," says Wolcott, "and the old joke is you can make anything you want out of lignin except money."

A 2007 study by the Pacific Northwest National Laboratory said lignin's complex

health, says Stacey J. T. Hust, associate professor at Washington State University's Edward R. Murrow College of Communication.

In looking at movies, television shows, music, and magazines popular with teens, she and her colleagues "found that less than one-half of one percent of all sexual content is actually health-related content," says Hust. "They'll depict a whole lot of sexual behavior, but no consequences that are realistic, and no real discussion of sexual health."

The research analyzed not only the incidences of sex, but also the content and context of the references. They found sexual health content was mostly ambiguous, inaccurate, and reinforced stereotypes like females being primarily responsible for contraception.

WSU communication professor Erica Austin, who collaborates with Hust as part of the Murrow College's Center for Media and Health Promotion, notes that even between television shows, alcohol advertising heaps on the innuendo and stereotypes of sexual behavior.

"Some kids will say that they feel there's an expectation that they will be sexually active and that alcohol makes it easier to go do that," says Austin, with little attention to the risks of mixing sex and alcohol.

Those consequences can include sexual assault, STDs, or unplanned pregnancy. "Alcohol use is one of the main problems associated with unplanned and unwanted sexual activity. Not just sexual assault, but also no contraception use or consenting to unwanted sexual activity," says Hust.

Despite the lack of good information and misleading sexual portrayals, adolescents often turn to television or movies for their information about sex, say Austin and Hust, which can influence their decision-making, particularly in the absence of parental involvement.

"I'm not suggesting that the media should be responsible for sex education. That would be ludicrous. But it's the absence of sexual health in sexual conversations that's problematic," says Hust.

The barrage of sexual messages and imagery can seem overwhelming and harmful, but Hust and Austin also see opportunities to use the media for education. They, along with WSU communication professor Bruce Pinkleton and WSU Health and Wellness Services communications coordinator Paula Adams, have tested media literacy and entertainment education as methods of dispelling myths and improving knowledge.

nature makes it hard to identify products to make from it. Still, the authors found more than 50. If it were used to make carbon fiber, they said, just 10 percent of the nation's potential lignin supply could displace half the steel in America's automobiles.

But even if lignin's economic and technological hurdles are overcome, the NARA group still faces the challenge of getting its ideas executed in the marketplace. It's why a NARA team is already working to identify Northwest communities that might be part of a biofuels economy.

"Really what this project is about is moving an industry," says Wolcott. "How do you get an industry launched? And what is the role for a public-private partnership like this that could help launch a new industry like this?"

A healthy dose of sex in the media

by Larry Clark '94 :: The average teenager will encounter 10,000 to 15,000 sexual references in the media each year. Sex-related scenes appeared on television at a rate of 4.6 per hour in 2005. Unfortunately, most of the sex portrayed in media has little to do with the reality of sexual



Above: Mike Wolcott, co-director of a consortium aiming to squeeze more use out of biomass. **Below:** Birgitte Ahring has developed a process to break down wood using oxidation, steam, and enzymes.



Think about the economics at the pump: An entire gallon can be bought for a few dollars, like milk. But if you developed a medicine from lignin, a single pill could earn as much, as could scores of chemicals and other products that might be derived from lignin.

"I think we have a bullet, a magic bullet," says Ahring. "We just have to open the box of lignin products with oxidation. We haven't done that. We have demonstrated that we can make the sugars that people want to make fuels. The next would be to demonstrate we can also create the building blocks for making high-value chemicals from lignin."



"If you're a teenager and you want to learn some sexual health information, you're really going to have to know how to find it," says Austin. "How do you help young people to use the media more effectively? Rather than just saying all media are bad, all messages are bad, there is some good stuff out there, but you have to be able to find it."

She and Pinkleton evaluated a media literacy curriculum—in which students learn how to decode and debunk media messages—to accompany both comprehensive and abstinence-only sex education programs, with very good results in stripping the facade of sex myths in the media.

"We found young people love the media literacy curricula," says Austin. "Everyone loves talking about the media—sometimes they like bashing the media, but they love to talk about. It's a great catalyst for having discussions on topics that might be difficult to talk about. It's a very effective way to draw people into a conversation about sexual health."

The media literacy training was peer-led, so teens presented the material and led discussion with the support of an adult mentor. "The participants really liked that other teenagers were presenting the materials to them. That really made it resonate," says Austin.

The media literacy method can also increase the effectiveness of other educational efforts, such as tobacco use, alcohol abuse, public affairs engagement, and nutrition, says Austin. "It seems to be a universally promising approach for health promotion," she says.

Hust also sees opportunities to use the media to help raise awareness and knowledge of sexual assault, the most underreported violent crime and a serious problem on college campuses.

"I use entertainment education, which includes working with script writers and producers to see how they can change their content to make it more healthy for the audience," she says, "and how health communicators can use that strategy so they can make entertaining messages that people will actually pay attention to."

She and Adams tried that method on the WSU campus with a short, free magazine sent out to freshmen. The magazine combined stories, comics, quizzes, and other entertaining material written by undergraduates with information on sexual assault, what consent means, and models of positive behavior.

Hust found the students welcomed the magazine and thought the sexual assault content was as engaging as the general interest content. It also had a positive effect on the readers' understanding of norms and their willingness to intervene in a sexual assault.

Research has found that students connect to entertainment media, which can serve as a catalyst for sexual health discussion. *Photo Robert Hubner*

Read the magazine on sexual assault prevention at wsm.wsu.edu/extra/assault-awareness.

A place of taste

by Hannelore Sudermann :: Chimacum Corner is more than just the busiest intersection in Jefferson County. It's a yellow-walled farmstand where tomatillos from Finnriver Farm meet Roma tomatoes from SpringRain and where bread from Pane D'Amore bakery can find Cape Clear tuna or cheese from Mt. Townsend Creamery. And it's where locals can find the ever-growing bounty of the local farms and fisheries.

The market is just two years old. And with the motto "Eat your food from here" it grew out of a need for the small-scale producers in the region to reach customers outside the farmers' markets. Rather than one day a week at the farmers' market stalls, customers can find local produce at the corner whenever they want.

Because it's a sign of the evolution of the local food scene, it's a necessary stop on a recent tour of the area with Laura Lewis '96, the Jefferson County director of WSU Extension. The county is an interesting mix of people. Long-time farmers and residents intermingle with newly relocated and often active retirees who chose the area for its beauty, outdoor offerings like hiking, gardening, and sailing, and the bounty from the area farms.

"And look at the things we have," says Lewis as we walk past the kimchee and hard ciders to peruse the free-range chicken, grass-fed beef and organic eggs. But there's still more to come.

Last spring, WSU hosted a meeting for Washington's farmers from both Eastern and Western Washington and vendors to talk about WSU's organic research efforts and what the college should be pursuing and supporting. "What is it

Our Story

Historic locations at WSU: Bryan Hall, Holland and Terrell Libraries, Thompson Hall, Stevens Hall, and the CUB.

wsm.wsu.edu/ourstory

» panoramas

that you want?” Dan Bernardo, dean of the College of Agricultural, Human, and Natural Resource Sciences, asked the group gathered in Seattle.

“We’re looking for a return to food with a sense of place,” said Denise Breyley, Whole Foods’s “local forager.” She regularly traverses our region from Oregon to British Columbia in search of new, fresh, and local products, from

Lewis, who was at the meeting, saw many links from what the attendees were saying with what was going on out on the Olympic Peninsula. Jefferson County’s high resident demand for local food is met by a steadily rising number of local producers as well as an increase in households growing their own food.



Chimacum Corner farmstand. Photo Bobbie Hasselbring/realfoodtraveler.com

line-caught tuna to locally-roasted nuts. Her customers have some definite desires. “There is a shift in the culture,” she said. “More people are interested in knowing how the animals are cared for, how the environment is considered.”

Trudy Bialic, the director of consumer affairs for PCC Natural Markets said the shoppers are interested in diversity, “in the unusual and the varietal,” she said.

The group, which included farmers from the Columbia Basin and Skagit Valley, also mentioned an interest in seeds and plants bred or selected to match our state’s microclimates.

Tapping into these communities, John Navazio, a WSU plant breeding and seed specialist and author of *The Organic Seed Grower*, works with Clallam and Jefferson County farmers to find varieties that do best in those climates—right now some of the key crops are squash, chicory, and carrots. They’re testing established and heirloom varieties, as well as making unique selections to find what does best where. Navazio is also leading an effort to help farmers do their own on-farm plant breeding for organic produce.

This is really local, says Lewis. Even a few miles make a difference. Look at the rainfall, she

says. Port Townsend gets 16 to 18 inches of rain, where Quilcene can get up to 60. “We’re not a Mediterranean climate, but we’re not maritime West Coast,” she says. “We’re a hybrid of the two.”

Just a few miles up the road from the Chimacum farmstand is what may be WSU’s newest tool for working with the local food economy—Twin Vista Ranch, a 30-acre farm on a hillside above Mystery Bay. Owner Lisa Painter is retiring from ranching and will donate the property where she and her partner Jeanne Clendenon, who died in 2011, had lived and worked for 40 years. “It was wonderful,” she says. “We worked hard and we loved it. We knew that a lot more could be done with the land.” She doesn’t want to see the property broken up into lots or turned into vacation condos, she says. Instead, in the hands of WSU, it can be a place for farming and learning, a resource for the community.

In addition to the ranch’s existing heirloom apple orchard, cattle operation, barns, and gardens, “we can use it to create a germplasm hub for the peninsula,” says Lewis. “It’s a place where we could potentially curate and store species.”

“Farmers on the peninsula want to have a really diverse agriculture system,” says Lewis. “That includes multiple varieties within a species.” And overall, the area is at an interesting point. Since the farms are about 50 miles and a ferry ride to another customer base in Seattle, “we have so much potential growth in front of us.”



More on the donation of Twin Vista Ranch as a Land Legacy Farm is at wsm.wsu.edu/extra/twin-vista.

A show with Heart

by Larry Clark '94 :: The funky *Second Ending* logo rolls across the screen, then fades to the KWSU TV studio where a young band takes the stage for a concert in February 1976. After an energetic instrumental prelude, the lead singer steps to the microphone and says, “Welcome in, everybody. This is Heart here and this is gonna be a nice evening.”

With that introduction to a packed studio audience of Washington State University students and others, Ann and Nancy Wilson and the other members of Heart launch into songs from their soon-to-be-released *Dreamboat Annie*, the album that brought the band international fame.

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short subject

SPIRITS ON THE RISE

:: by Hannelore Sudermann ::

THE MORNING IS COOL ON SAMISH ISLAND, with a fog hanging over the water. But inside an old chicken coop, it’s steamy and sweet. A beer of barley mash is bubbling not too far from the door, tall copper stills stand like sentinels on the left, and the back is layered with metal shelves stocked with small white oak barrels.

During Prohibition, boats loaded with whisky from Canada would slip through the San Juan Islands and land just down the beach from here. According to family lore, Mary Lou Caudill’s uncle was often on board. “He worked on the boats bringing alcohol in from Canada,” says Caudill ’68. “He kept the engines running.” Some of the deliveries were consumed at the nearby speakeasy, others loaded into big touring cars and driven down to California.

Now, thanks to a series of new liquor laws, Caudill and her husband Jim and another couple have brought whisky back to Samish Island, having formed Golden Distillery, a small-batch craft operation.

The Caudills and the Stilnoviches are retired restaurateurs, the Caudills having run La Conner Seafood and Prime Rib House. The men were looking around for something to do. Mary Lou, who saw an advertisement for a distilling clinic organized by the Washington State University–Mount Vernon Research Center and the nonprofit Northwest Agriculture Business Center, urged them to check it out.

In 2007, the state legislature started moving the state out of the shadow of Prohibition by passing a law permitting craft distilling. Dry Fly in Spokane was the first to start operating that year. First a trickle, then a cascade of new license applicants followed. In June and August of 2008, the ag business center organized the distilling courses at the Mount Vernon research station. One reason for the program was to offer farmers a way to add value to their crops, says David Bauermeister ’83, executive director of the NABC. The state is a major producer of berries, apples, grapes, potatoes, and grains, all of which can be turned into alcohol.

The two-day class taught the basics of distilling, starting with the science of hand crafting an alcoholic beverage. While they caught on quickly, it took Jim Caudill and Bob Stilnovich about a year to finesse their method. “When we first started there was no one around who could tell us how to do it,” says Stilnovich. “We made some of the worst stuff you’ve ever tasted.”

They also played around with their technique and put their restaurant know-how to work on the stills. Instead of using thermal sleeves around the tall copper pots, they set them on surplus restaurant griddles. They could just as easily be flipping hamburgers on them, say the guys.

Coordinates

Craft distilleries in Washington

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wsm.wsu.edu/coordinates



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Here's where the craft begins. Larger distilleries are mechanized and measured. Here at Golden the whiskey makers do everything by hand, measuring the barley, brewing the beer, even tasting the distillate to know when to start capturing the alcohol when the flavor is where they want it, and stopping before the undesirable compounds come out. It's the heads and tails, Caudill explains. The first stuff to come out is the head, higher alcohols such as acetone and esters that could harm you to consume. At the end come the tails, which can make the distillate taste bad.

They age their whiskey in white oak barrels, where it picks up flavor and color, and when it's ready they hand bottle it. Their process works. This year two of their single malts took gold medals at the American Distillery Industry meeting in Kentucky. And now restaurants and hotel bars are asking specifically for their products.

A few of the region's 40-some other new distilleries were also introduced to the craft through the NABC workshops, notes Bauermeister, naming Freemont Mischief and San Juan Island Distillers as two of the newer ones.

"I think it's going to unfold much like the wine business," says Dennis Reynolds, the Ivar B. Haglund Chair in Hospitality Business Management at WSU. That means we should expect a growing number of high-quality small-scale craft distilleries.

"The spirit business today has evolved. It's like a marketing machine," he says, pointing to the slick magazine ads for vodka. But this new generation of consumers is discerning. They are craving high quality products that are more special and unique "like Seattle

restaurants selling Seattle-made alcohol," he says. "It follows the farm-to-fork idea."

Like a fine aged whiskey, the craft industry is going to take some time to mature. Until this year, the small-scale and craft distillers weren't finding their way into the state's purchasing system—and then not onto the shelves of liquor stores and bars. When voters passed Initiative 1183 in 2011 they changed the state laws allowing the small-scale distillers to sell directly to restaurants by last spring and by June, to deal directly with private liquor stores. But it was a rough few months. "When the state lost the deal, they shut us off," says Jim Caudill. "From November until May we couldn't sell anything." Still the change in the law and the direct access to customers "made it possible for us to survive," he says.

This scene on Samish Island is unfolding all over the state. Dry Fly in Spokane has led the way for Freemont Mischief in Seattle, Walla Walla Distilling, and Ezra Cox in Centralia. In Snohomish County Ryan Hembree and his wife Julia have Skip Rock Distillery where they make artisan vodka out of Yukon Gold potatoes from Skagit Valley. Now that the vodka has won great reviews, Hembree, who studied winemaking at WSU, is making a white whiskey and working on several other products.

As project manager for the NABC, Jake Fowler '03 helped run the distilling clinics, but has recently turned his focus to the apple orchard at BelleWood Acres in Lynden and the new distillery, the first in Whatcom County.

"We're just seeing the start of this," says WSU's Reynolds. "People here are ready for it. Look at the success of our wine industry, our microbreweries. I think the distillery business is going the same way." ☒



Above: Jim Caudill and Bob Stillnovich work in their Golden Distillery on Samish Island. *Photo Robert Hubner. Right:* Jake Fowler '03 is managing the new distillery for BelleWood Acres in Lynden. *Photo Andy Bronson/The Bellingham Herald*



See a map of Washington craft distilleries at wsm.wsu.edu/extra/distilleries.

» from page 12

Behind camera two, right up next to the stage, Rich Cowan '79 was filming close-ups of the musicians and their instruments for the KWSU live music program. "It was loud," says Cowan, "but the voices were amazing. Rock and rollers don't always have those kinds of voices."

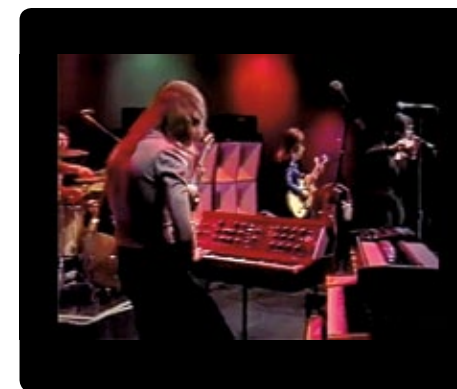
He and the other camera crew members had to wrap their headphones in Ace bandages to hear the director's instructions.

Upstairs in the engineer's booth as he ran the video and recording, Don Peters '69 felt the bass thumping up through the floor. He had the monitors cranked to enjoy the music.

"I was really taken with Nancy's guitar playing," says Peters. "I was blown away. The power of Ann's voice makes that connection with you."

As the Wilsons, Roger Fisher, Howard Leese, and Michael Derosier played "Magic Man," "Crazy On You," and other future staples of rock music, freshman Steve Wilson '78 ran cables as a grip and backed up camera three. "It was their signature sound," he says. "They brought in all their stuff and we did a sound check in the morning. I remember they were really friendly."

The Heart concert was memorable for the student and professional production staff, but *Second Ending* ran two or three concerts a month at KWSU in the 1970s. The show, created and directed by the late Mike Cotsones, aired on PBS stations around the Northwest, along with several other WSU-produced original series.



Video frame from the rock band Heart's 1976 WSU concert. *Courtesy KWSU*

"Mike Cotsones, the director, was a real rock 'n' roll aficionado, and I had never heard the band until he played Heart's music for us before the show. I think as director there were a couple

of times he got a little over-excited because he was so happy to have them there," says Cowan.

For Heart, that Pullman concert in 1976, "shows us at a seminal moment in our performance development. This is a band with one foot in clubs and the other on the concert stage," writes Ann Wilson in an email. "I remember being pretty nervous, and feeling pretty thrilled to be there."

The Wilson sisters chose the KWSU appearance for their retrospective collection *Strange Euphoria*, released earlier this year with four CDs of the band's favorite studio and live music. A DVD of the *Second Ending* concert rounds out the set, showcasing a band that went on to sell over 30 million records and influence numerous other musicians in the Pacific Northwest and beyond.

"We are a Northwest band (a Northwest bar band actually), and anytime we can touch our roots we are proud to do so," writes Ann Wilson about selecting the concert for the collection.

"Back in the mid-70s, music was really part of the zeitgeist of the campus. Having this band with two leaders who were women was a little outside the box," says Cowan.

The concert was recorded in mono with few special effects, but the band "brought their

Remember the time what's-his-face was guarding that guy on that other team? And that one guy took that shot — was it a two- or three-pointer? And boom! He drained it and the crowd went wild. I'll never forget that!

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» panoramas

own sound equipment, so what they captured was really primo," says Peters. "Back then we didn't have all the tools to fix things. We were pretty much flying by the seat of our pants, we got one chance at recording and hoped it better be right. Fortunately for Heart, it was."

The student staff took the skills they gained at KWSU and on programs like *Second Ending* into the professional world. Cowan worked at KHQ in Spokane before starting Spokane-based production company North by Northwest, which has about 50 feature films and numerous television programs and commercials to its credit. Cowan retired as CEO of North by Northwest and is running for Congress.

Steve Wilson went to work for KING TV in Seattle, where he directed *Almost Live* for 15 years and now directs *New Day Northwest* for the station.

Don Peters kept working at KWSU, where he is now director of engineering. Counting his time as a student production engineer, he has worked with the station for about 42 years. <<

Watch the 1976 Heart concert and read about the boxed set at wsm.wsu.edu/extra/Heart.

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» Master Plan for the WSU Pullman campus

Over the past 120 years, WSU has grown from a small agricultural college to a major research and teaching institution and adapted the campus as it changed. To prepare for the next 20 years, the University adopted a Campus Master Plan update which creates a framework for growth at the Pullman campus. The plan anticipates much growth in both student numbers and research efforts through 2030, with a framework for planning buildings, roads, and other infrastructure. The Master Plan has four primary goals: to create a superlative research campus, to build a sense of place with more open areas and a renovated campus core, to focus on pedestrians, and to make the campus more sustainable.



The Master Plan was developed in 2010-11 in a collaborative effort with WSU administration, faculty, students, and consultants Hanbury Evans Wright Vlattas + Company. This map highlights some of the proposals. The entire plan is at www.cpd.wsu.edu/CampusPlanning/MasterPlanUpdate.

- A** Interim location for new WSU visitor center
- B** Student life facility with parking below
- C** Housing for single graduate students
- D** New and revitalized residence halls
- E** Renovated and expanded Beasley Coliseum
- F** Stadium Way pedestrian mall: Realign Stadium Way and Grimes Way to create a pedestrian mall and central green space and close Stadium Way to automobile traffic
- G** Central green space
- H** Future expansion of research campus
- I** South campus loop road
- J** Family housing and WSU Children's Center
- K** Potential future hotel conference center
- L** Relocated baseball stadium, with the existing stadium converted for women's softball
- M** Greenhouses
- N** Research campus
- O** Organic farm
- P** Grimes Way as divided boulevard with integrated stormwater facilities
- Q** Long-term location of WSU visitor center
- R** Research incubator park
- S** Animal research



See more details of the Master Plan
at wsm.wsu.edu/extra/masterplan.

ONIONS

:: Tim Steury ::

Think of all the recipes that begin with this simple instruction: *Cook (saute, melt, etc.) onions.* In spite of that ubiquitous beginning, however, the literature of food, which can wax poetically and extensively about salt or beans or wine, gives the onion, which provides the savory structure for thousands of dishes, short shrift.

Maybe it is just that onions are so fundamental that we take them for granted, chopping and ingesting them as casually as we breathe air or drink water. Perhaps it is that the onion is a basic and ancient staple, like rice, corn, garlic, its wild ancestors an inherent part of our culture and appetite. Although they have been cultivated for at least 3,000 years, wild relatives undoubtedly nourished and pleased our ancestors far back in the ancient depths of culinary time.

And so, it is good that a select group of Washington farmers give onions their full attention.

Last year they harvested 22,000 acres of onions on fewer than 20 major commercial farms, nevertheless ranking our state as second, next to California, in total U.S. onion production. The best fields produce upwards of 50 tons per acre.

On a hot day in mid-August, just north of Connell, Brad Bailie '95 is giving me a tour of his 650 irrigated acres to show me how he raises such beautiful onions. The bulbs are large and packed against each other halfway out of the ground, their leaves stiff and deep green. Most of what Bailie grows are yellow bulb storage onions, which also make up the majority of Washington production. But he also grows red onions and sweets. The sweets are similar to Walla Walla sweets, of which only a thousand-acre crop around Walla Walla can be so named. [See article in fall 2010 issue.]

Onions are not an easy crop to grow, says WSU regional vegetable specialist Tim Waters ('02, '09 PhD) later in the day as we inspect plots where he runs performance trials on different pesticide and fertilizer regimens. Onions are a high-risk, high-payoff crop, and Bailie has upped the ante considerably by growing them organically. Although organically grown onions can pay off handsomely, at up to twice the price of conventionally grown onions, producing a healthy crop without the help of conventional fertilizers and pesticides requires a very non-conventional mindset.

The fourth generation of his family to farm this land, Bailie traveled after college and worked for a couple of years with farmers in the Guatemalan highlands. When he returned to the States, he worked a while for a seed company, then started raising native plants for seed on rented land. After the farmer who rented part of the family's land retired, Bailie decided to take it over.

"This field will be next year's onions," he says of a plot he planted last fall in triticale and nitrogen-fixing vetch as a cover and green manure crop. He follows the vetch and triticale with mustard, which adds a huge amount of organic matter to the soil and also acts as a biofumigant against various pathogens. Mustard also absorbs a lot of nutrients, keeping them from leaching from the topsoil during the winter.

Bailie has planted insectaries around his property, permanent plantings to provide cover and food for beneficial insects. Part of each insectary is a grassy mound where beetles overwinter. "Beetles eat a lot of weed seed," he says.

Bailie encourages any help he can get in combating weeds, a particularly irksome problem when one has foresworn synthetic herbicides. Onions present a particular challenge because they create only a light canopy against the competition. Although onions can be mechanically cultivated when young, later weeding is done by hand.

Although Bailie says he doesn't get any major outbreaks of pests, which he attributes to the beneficials he encourages, "We do have thrips."

We get out of the pickup, and he pulls up an onion plant to show me the infestation of the minute insect, about which he is, unconventionally, unconcerned.

Rather than spray, even with organically permitted chemicals, "We figure we'll put up with a little damage."

Although thrips are well-protected as they squeeze deep into the neck of the onion plant, Baile has confidence in his predatory insect allies, noting that his yields are nearly as high as the best of conventionally grown onions, but without the pesticide costs.

Thrips feed on the onion leaves, says Waters, as we inspect similar populations on his plots later in the day. Thrips (and even a single insect is a thrips, he says) adults will land on the plant, feed, and insert eggs in

the epidermis of the plant. Thrips have an unusual asymmetrical mouth consisting of a mandible and a stylet, with which they "punch and suck." The resulting damage, called stippling, reduces the plant's photosynthesis and, depending on the severity, production.

Not every grower is as tolerant of thrips damage as Bailie, and most conventional growers will spray against thrips several times during the growing season. Because thrips reproduce so quickly, they can also develop resistance to a pesticide if it is used repeatedly. To counter the chance of resistance, Waters conducts trials on his plot in Pasco to determine the most effective order of pesticides to best control the thrips and avoid resistance.

Those leaves that provide the thrips with such effective food and shelter also provide habitat for a wide range of microbial and fungal pathogens.

If you cook much at all, you've surely been confronted with that horrifying situation of cutting into the last onion in the pantry only to find it is rotten inside. Neck rot is the most likely candidate of a host of pathogens that cause spoilage in storage onions.

Brenda Schroeder '97 PhD, a WSU plant pathologist, is the lead researcher on an ambitious project to curtail those pathogens and ease your frustration.

"Once onions go into storage, the farmer has put in over \$3,000 an acre," says Schroeder. If the onions are infected with any one of a dozen species of bacteria or 14 species of fungi, that investment can be severely docked when the onions are pulled out of storage to sell.

Unfortunately, infection is currently difficult to detect.

The onion harvest is a meticulous process, particularly for onions that will be stored over the winter. Once they are dug and have dried out a bit, another machine will pass through the field to cut off the tops. Timing is crucial, as the neck of the onion ideally dries and seals itself off from invading pathogens.

"When these bulbs go into storage, they are beautiful," says Schroeder. But if pathogens have made their way into the interior of the onion, under the right conditions the onion will rot in storage.

Schroeder and her team are developing an easy-to-use diagnostic kit that can tell the grower whether pathogens are present in the stored onions. If they are, the onions can be pulled out of storage early and sold before they rot.

None of those pathogens are harmful to humans, says Schroeder. They might taste bad. However, "You and I have probably eaten all of these fungi and bacteria and never been negatively impacted at all."

One might allow a certain admiration for these pathogens in surmounting the chemical defenses onions have developed over eons of evolution. The sulfur compounds that make you cry as you cut a strong

onion are part of that defensive arsenal and also part of what makes onions so good for you.

The more than 100 sulfur compounds produced in onions have anti-inflammatory and antiseptic properties. Throughout history, onions and other alliums have been used for their medicinal as well as culinary virtues. During the American Civil War, onions were valued both for eating and for treating wounds. At one point, Ulysses S. Grant sent an urgent telegram to Union headquarters in Washington, D.C.: "I will not move my army without onions." He got them the next day, three traincar loads.

Onions are also high in vitamin C, potassium, and fiber.

But as all vegetables are good for you to varying degrees, I will not end my paean by obscuring the gastronomic virtues of the onion with the merely healthful ones.

You really should eat even more onions than the 18.5 pounds a year the average American eats, and not just because they're good for you or even to support Washington onion farmers. Rather, onions taste wonderful.

There must be some moral lesson in the pleasure that follows the momentary tearful suffering that sometimes accompanies cutting onions. For cooking instantly transforms those volatile compounds into pure pleasure.

Harold McGee, in his *On Food and Cooking*, notes that some of the odor compounds driven off by cooking convert into another complex molecule that is 50-70 times as sweet as a molecule of table sugar.

"It is hard to imagine a civilization without onions," wrote Julia Childs in her all-too-brief homage to the onion in *Mastering the Art of French Cooking*. But if her words were brief, her recipe for onion quiche is worshipful in its simplicity: crust, eggs, and onions. *First, cook two large onions.* ☒

For more on selecting the right onion and a bit of onion lore, visit wsm.wsu.edu/extra/onions.

Yuan Fang the Hermit on an Autumn Day

By Tu Fu, 8th century

<i>Potherds in the autumn garden</i>	<i>full of Winter Onions, still</i>
<i>round the house</i>	<i>Damp with dew. Delicately</i>
<i>Of my friend the hermit</i>	<i>grass-green bundles,</i>
<i>behind his rough-cut</i>	<i>White jade small bulbs.</i>
<i>Timber gate. I never wrote</i>	<i>Chill threatens an</i>
<i>and asked him for them</i>	<i>old man's innards,</i>
<i>But he's sent this basket</i>	<i>These will warm and comfort me.</i>



Above: Bob Robertson in the broadcast booth, 1978. *Courtesy WSU Athletic Communications.* **Opposite:** Alongside broadcast partner Shawn McWashington (left), Bob Robertson calls the WSU-Colorado Homecoming game at Martin Stadium, September 22, 2012. *Photo Robert Hubner*

That voice

by Jason Krump '93 :: It's 8:00 a.m., Saturday, September 8, when Bob Robertson arrives at Martin Stadium. Four hours from now, kickoff between the Washington State Cougars and Eastern Washington University will occur in the first game at the newly renovated stadium.

And when kickoff does happen, Robertson's signature voice will carry the action to Cougar football fans for the 510th time.

It's a voice Cougars everywhere connect with Washington State football—even when at a rival school.

"I must say when it worked, and when I was in Portland and the Cougars were playing, I'd get Bob Robertson on the radio," says Washington State Director of Athletics Bill Moos of what he did when he served in the same position at the University of Oregon.

"There is just something that is unique about Bob, whether it is his classic lines and approach," Moos explains in his office at the Bohler Athletic Complex. "When you hear that voice, you think autumn leaves, crisp afternoons, the cracking of pads, and the Cougar Fight Song."

And then to emphasize the point, Moos leans forward in his chair and does his best Bob Robertson impression of the classic lines: "Signals Called! Touchdown Washington State!"

And then the saying that Cougars everywhere revere: "Always be a good sport, be a good sport all ways."

When he began his broadcast career in the late '40s, Robertson, 83, believed he needed a catchphrase to call his own.

"I tried several things and either they didn't work or found out someone on the networks was using it or something very close to it," Robertson remembers.

Then one day Robertson hit on something. And he spells it out, literally.

"Always, a-l-w-a-y-s, be a good sport. Be a good sport ALL ways."

"I don't know if the message always gets through because a lot of people don't often catch the play on the always, all ways," he says. "It's something that became part of my broadcast so I keep on using it."

For nearly a half a century, players, coaches, and fans hear Robertson use the phrase on Cougar football broadcasts.

One being Moos.

"I listened to Bob Robertson when I was a teenage boy," he remembers. "I dreamed that maybe one day Bob Robertson would call my name."

That dream became fulfilled in 1972 for Moos, an all-conference offensive lineman for a Cougar football team that finished 7-4.

"It was a good year," recalls Robertson of the 1972 season, the first of 41 continuous seasons in the broadcast booth for WSU. "We had some pretty good kids on the club."

And on the Friday night before the season home opener, Robertson gets a chance to visit with those "kids" when he serves as master of ceremonies for the reunion banquet commemorating the fortieth anniversary of the 1972 season.

The following day he will call the names of the kids on the 2012 team.

After he arrives at the stadium on this Saturday morning, he first explores the new press level of the building and then makes his way to the radio booth named in his honor.

There he joins broadcast partners Bud Nameck, Shawn McWashington, a member of the 1998 Rose Bowl team, and Jessamyn McIntyre

to make final preparations for the game ahead.

"I think Cougs when I hear Bob," says Nameck, taking timeout from his pregame preparation to talk about an individual he describes as a legend.

"I have a framed lithograph in my family room that's a 100 years of Cougar Football. It has coaches, players, and it has Bob Robertson," Nameck says. "When you think about it, during my 30 plus years since I've been here, the one constant during that time is Bob Robertson."

Constant to the point that Robertson has called Cougar football games in six decades, from 1964 to 1968 and since 1972.

And though he is in his 46th season of broadcasting Cougar football, Robertson still feels the excitement leading up to the game.

"When you lose the kickoff butterflies, perhaps it's time to retire and go away," he says. "I like the competition and being there to present it and give the audience something to listen to."

"It's what I do. You might say it's what I am."

Once kickoff happens, the fans in the new premium seating areas listen to Robertson's voice, broadcast throughout the building, as they watch the action below.

"Bob is truly a Cougar icon," says Moos. "That building could not, in my mind, have the impact it's going to have if it wasn't inhabited by Bob Robertson in the Cougar radio booth."

Robertson's impact has been felt by generations of Cougar fans, who have fallen in love with his voice and catchphrases. And the feeling is returned in kind.

"They say thank you for broadcasting the games all these years and they don't realize that I had as much fun broadcasting a game, or maybe more, than they did just watching it," Robertson explains.

Robertson no doubt has fun broadcasting this game, a 24-20 victory for the Cougars. As he prepares to sign off for the 510th time, Robertson ends his broadcast just the way he ended the previous 509.

With that voice.

"This is Bob Robertson saying thanks for joining us and reminding you to always be a good sport, be a good sport all ways." <<

 Watch/listen to highlights from Bob Robertson's career at wsm.wsu.edu/extra/Bob-Robertson.



N 49° 0' 43" | W 123° 34' 31"

FEASTING *on the Salish Sea*

by Tim Steury :: seascapes from "Salish Sea 2" by David Ellingsen

IT MUST HAVE BEEN QUITE THE FEAST.

No one remembers the host. Or how many guests there were. Or how long it lasted. Or even when it was exactly, though 650 years ago is a good guess. We do, on the other hand, know what they ate—approximately 10,000 sea urchins.

Archaeologist Colin Grier and I are standing at the back corner of what was once a longhouse on the northern tip of Galiano Island at the southern end of the Strait of Georgia in British Columbia.

In 2010, Grier and his crew, intent on another project, had nearly passed on this ancient longhouse. But they decided to quickly dig a test pit, just out of curiosity. And bingo, they landed right in a large hearth full of sea urchin remains.

Trees have once again taken over the site where the plank longhouse sat. The outline of the house, approximately 10 by 40 meters, is clear and ghostly. Such a distinct impression is rare, says Grier. There are probably only five or six sites in the whole region with obvious house depressions.

Based on carbon dating, the house was occupied between 650 and 1,000 years ago. There may have been another house, maybe two more, joining this one, though no one has excavated in search of them. These days, a pedestrian path to the beach leads right across the house floor.

The remains of the sea urchin feast date to around the time the house, for whatever reason, was abandoned. It might well have been its last feast.

In his *Peoples of the Northwest Coast: Their Prehistory and Archaeology*, archaeologist Kenneth Ames '76 PhD introduces a sweeping examination of a diverse and complex region stretching from northern California to southern Alaska.

Along this 2,000-kilometer coast (as the raven flies, that is; the coast itself, with its thousands of inlets, is much, much longer), the original peoples were extraordinarily diverse. In the mid-nineteenth century, 39 languages in 11 language groups were spoken along the Northwest Coast.

The Coast Salish alone had scores of local groups, all differing in their traditions, histories, and practices. Among them were the Hul'qumi'num, to which the ancient residents of Galiano Island and their presumed descendants, the Penelakuts, belong, even though the Penelakuts' oral history has no recollection of these specific villages.

Grier, a Canadian who has spent most of his life on the West Coast, has been exploring the vicinity's past for the past 15 years. He joined WSU's anthropology program in 2007, filling the position in Northwest archaeology held for 50 years by Robert Ackerman and reinvigorating an emphasis on Northwest coastal archaeology established by Richard Daugherty and the Ozette dig on the Olympic Peninsula in the 1960s.

In 1996, Grier and colleagues were working at another site, Shingle Point on Valdes Island. They had boated over to Galiano on a field trip. "I had all these questions for my dissertation about household organization. I needed a site where I could investigate a large household."

Now we're standing in what may have been the house's front yard, he says, where they found lots of refuse and bone points. Maybe it was a work area, suggested by a piece of worked schist or shale with bone tools next to it.

As substantial and large as it was, the longhouse was moveable and adaptable. A log frame was covered with cedar planks and was modular in design, enabling the inhabitants to easily expand or shrink the house according to space needs.

The inhabitants of the longhouse subsisted over the winter on salmon gathered from the Fraser River to the northeast. In the spring,



Green sea urchin *Strongylocentrotus droebachiensis*.
Courtesy Shaw Ocean Discovery Centre

herring would be the first resource to come back. Then sea mammals and plants. Then in summer or late spring, people would move, take the house planks with them, maybe visit relatives in highlands, maybe hunt deer or collect berries. They would re-gather in the fall, living what Northwest Coast archaeologists call the “winter village pattern.”

At the time the longhouse was occupied, Grier estimates that the population of the greater Salish Sea area was 70,000 or more. The house here at Dionisio Point sheltered probably 60 people. Villages lined the shore every four or five kilometers. Grier says there were probably 500–1,000 people living within an easy day’s paddle.

Ames suggests that the population of the entire Northwest Coast, before the epidemics introduced by Europeans, may have been a million or more.

The important question for Grier, however, is not so much how densely populated the ancient Salish Sea was, but how these people came to settle in households. “Why did these large households come into existence?” he muses.

“I’ve always been interested in household archaeology. It connects the inside of the house to broader changes, to economic patterns in the region.”

Ames, who wrote his dissertation on Ozette, observes in his *Peoples of the Northwest Coast* that indigenous peoples of the region break all the anthropological stereotypes.

The question lurking in many anthropologists’ minds is why did our ancestors move from hunting and gathering to a more sedentary life? How did we become settled? And how did that change catapult us toward the kind of societies we live in today?

The long-held answer is that agriculture provided humans the path toward sedentism and complexity, toward a modern culture. People of the Northwest Coast have confounded those traditional assumptions.

“For a long time,” says Grier, “the thought was that the path to civilization was through agriculture. Hunter-gatherers were mostly irrelevant, but kind of an interesting side-path.”

The evolution of thinking about social and political complexity is suggested by the shift in the scholarly terminology. “Hunter-gatherers,” in reference to Northwest Coast people, became “complex hunter-gatherers” and “affluent foragers,” reflecting the steadily increasing understanding of the archaeological record.

There are three means of understanding Northwest Coast people: the oral history of the people themselves; ethnography, including the written accounts of early European explorers; and archaeology.

Much of our understanding, gathered through the first two means, is that the culture of Northwest Coast people was based largely on salmon, that salmon was a readily available, abundant resource. Indeed, it is clear from Grier’s investigations that the people living on Galiano Island would relocate temporarily to gather salmon from the

Fraser River, then return with their winter stores of dried salmon to their base at Dionisio Point. Add to that a few halibut and herring, maybe a sea lion or two, and the good life was to be had for the taking. Why bother farming?

But further examination and reflection is suggesting that maybe this view, generally supported by evidence produced after European contact and accompanying epidemics, may be only part of the picture.

Indeed, Grier cautions that historic accounts need to be considered in light of archaeological findings. “Loss of population resulting from diseases introduced by Europeans may have shifted long-standing territorial relationships and patterns of movement,” he writes. Although “hunter-gatherers,” no matter how “complex,” have traditionally been thought of as not practicing agriculture, the economic practices of the Northwest Coast peoples were likely more complicated.

Grier’s work points to “a broad and varied suite of resources” rather than a singular focus on salmon at any period.

Not only were the resources broad and varied, they were cultivated.

“What is interesting,” writes Kelly Derr in an email, “is that because native people were not using domesticated crops or recognizable species (with the exception of wild tobacco, *Nicotiana attenuata*), very little attention was given ethnographically to how they managed landscapes for plant food production.”

Derr is a doctoral candidate working with Grier and is the manager of the Dionisio Point excavation. Her dissertation is focused on natives’ use of fire to manage their landscape on nearby Valdes Island.

It has been argued, she continues, that the quick adoption of potato farming by Coast Salish people right after contact is evidence that cultivation practices were already in place.

Derr’s dissertation research concerns “agricultural” practices prior to contact. Actually, she prefers the term “intensive cultivation,” as it avoids the domesticated crop bias of “agriculture.” Of particular interest to Derr is burning as a means of managing the landscape.

“What we are finding,” she writes, “is that people were very much involved in managing and domesticating the land they put into cultivation, but were not focused on genetically domesticating the plant species.”

Derr’s argument is furthered by a number of other Northwest anthropologists, perhaps most actively by Douglas Deur. A collection of essays he edited includes contributions by Ames and others. Deur argues that although Northwest Coast resources were indeed abundant, they were not so readily available that people could just walk out the front door of their plank houses and gather dinner year-round. In order to augment the natural bounty, native people managed the landscape in many ways, particularly necessary given the documented high population densities of the region.

Grier comments, “It seems as though the extensive land/coast modifications that were employed in cultivation (burning camas



Amidst the clamshells and “fire-altered rock,” a midden offers tantalizing clues about a culture. *Staff photo*



meadows, carefully managing salinity in tidal-influenced gardens with midden and earth constructions, building wapato fields akin to rice paddies, etc.) was matched by efforts in other areas too—fish weirs, clam gardens, etc.

“This broad spectrum intensification (rather than just intensifying stored salmon output) seems to better explain much of the data we are accumulating than the salmon storage/intensification = affluence model presented for many decades.”

“And here’s the village,” says Grier.

Much older than the nearby single longhouse, the village remains as the vague outlines of five houses, situated on three terraces carved from the slope about ten meters above the surface of the water.

The floor areas range in size from 200 to 400 square meters.

“House 2, on the lower terrace here, is the one I did in 1997–98 as part of my dissertation.”

Grier was interested in finding out what different families in the house were doing. Family units within larger households had by this time developed specialties. One family specialized in hunting terrestrial mammals, evidenced by deer hunting equipment around one of the hearths. Another specialized in hunting sea mammals.

These specialties, in addition to fishing technology and others, were all part of what was going on in the winter village pattern. As populations increased and larger households formed, other patterns developed. Inequality, for one thing.

The excavation revealed few artifacts, other than a couple of interesting exceptions. The team found a cache of about 5,000 slate beads, which are associated with burial and wealth.

The process of making the beads starts with a sheet of slate or shale, about five millimeters thick. The stone is scored in a checkerboard pattern, maybe halfway through. Holes are drilled in each square. Then the squares are snapped off and strung. The string of beads are rolled on sandstone until the edges are rounded.

The beads are extremely labor-intensive, and, needless to say, a sign of affluence and extravagance.

The archaeologists also found two carved bowls in the shape of a human head. One contained ochre, which is still used as body paint for spiritual protection.

The bowls are made of local sandstone, their motifs and style connecting the village somehow to a religious ideology that emerged first on the Fraser River.

“We start to see status differentiation,” says Grier, referring to labrets made of soapstone. Studs that were worn in the lower lip, labrets and the shaping of a sloping cranium, formed in the infant, were reserved for the nobility, one of three distinct classes along the Northwest Coast (nobility, commoners, and slaves).



Above: Archaeologist Colin Grier with a newly uncovered Marpole point. *Staff photo.* **Below:** Galiano Island with the Fraser River plume. For more explanation and a detailed map, visit wsm.wsu.edu/extras/Galiano. *Courtesy Galiano Conservancy Association*



The current interest by Grier and others in household archaeology might be traced to Ozette and the spectacular insights offered by its perfectly preserved tools and cultural artifacts.

“Up to Ozette, you really didn’t go out and dig houses,” Grier had noted in an earlier conversation. “You dug shell middens.”

Which is what he’s returned to this summer.

Grier and his crew have been excavating a shell midden for the past month. Working with Grier this summer are four WSU anthropology students: Doug Beyers, a senior; Annette Ruzicka, a master’s student; Erin Smith, a doctoral student; and Derr.

Also working with them is Maria Eugenia Orejuela, from Colombia and a doctoral candidate at the University of Barcelona. She is studying the relationships of archaeologists with First Nations people, with whom Grier has a particular productive one.

Middens, basically the refuse heaps of the past inhabitants, are a major source of information. In order to get a feel for just how significant and telling they can be, go through a bag of your trash at the end of the week. A thousand-year-old midden might not reveal the people’s reading habits so clearly as your trash might. But it certainly indicates diet.

I ask Smith and Derr if they’ve gained any insight from the summer’s dig.

“They ate a lot of fish,” says Derr, laughing, noting that a midden, revealing as it is, does not provide quite so dramatic an insight into the culture as does a house excavation.

She jokes about people happening on their site and asking, well, what have you found?

Horse clams, she tells them, along with lots of other shells and fish bones. Their eyes glaze over pretty quickly, she says.

In spite of its subtle stories, this midden probably would have been left alone had it not been for the fact that the ocean had finally reached it and threatened to deconstruct its story.

Even though the cove beyond the midden is calm, and the tide low this morning, winter storms have eaten away at the beach over the past decades. Because of increased boat traffic, logging, debris, and rising sea levels due to climate change, says Grier, all coastal sites and the data they hold will ultimately be similarly threatened.

The result, finally, has been the breaching of this ancient midden, its shells and bones being reclaimed by the sea. But what made this midden’s disintegration particularly troubling were the human remains. With rising sea level, it is not just clam shells, but cemeteries that are threatened.

Up until about a thousand years ago, Northwest Coast people buried their dead mostly in the middens. And then, for some reason, they stopped.

Clearly, their middens were, indeed, different from our refuse heaps.

Grier believes there was probably another midden nearby belonging to the same settlement. There is not much household refuse in



the midden they are excavating, no broken tools and other discards normally found in a household midden.

"This is probably the input part of the throughput system," says Grier, "a lot of whole clams, resource processing."

Digging a midden is a meticulous process.

Everything in the midden is sifted with a screen, which along with the shovel and trowel is a basic tool of archaeology. The screen has three-millimeter openings. A bucketful of midden is placed in the screen and then shaken. Everything smaller than the openings falls through, mainly soil and sand.

What's left on the surface of the screen is then sorted through. As the midden is excavated, major changes are given a letter. "A" is soil, "B" is shell midden, "C" the sands underneath, and "D" the yellow sands below that. Each layer is further divided into 10-centimeter levels, and everything is recorded, with lots of cross referencing so data are not lost.

And what do they find? As Derr pointed out, lots of clam shells and fish bones. Rockfish, herring, salmon, some halibut.

And lots of dog bones.

And then, every once in a while, an artifact. Derr finds a perfect Marpole-era spear point.

Mid-afternoon, Grier hands me a bead he has just found. I place it on my knee, along with a couple of fish vertebrae, to photograph it. And then, it's gone.

"Colin," I say, "I've lost your bead."

He looks dismayed, and we search the sand around my feet. Nothing. I spend a half hour running the surrounding sand through the screen. Nothing.

"Welcome to archaeology," says Derr. I've been initiated.

The next day, the last afternoon of the dig, I have been put to work on the screen, no longer able to claim journalist's privilege. I have been working for about an hour, throwing out fire-altered rocks and horse clam shells, saving fish vertebrae and dog bones, puzzling over unidentifiable curiosities.

And then, a bead! Everyone cheers.

"I've been redeemed?" I ask hopefully.

"No," says Grier, "you're just back to zero."

As they work, the crew is alternately quiet in their concentration and making jokes and patter.

After 30 days living in a tent and sorting out fish bones and clamshells, the crew is remarkably convivial. I accuse them of putting on a show for me. But no, they are the lucky crew who gets along rather famously.

Grier switches from his concentration on digging to the village.

"Who knows why they abandoned it," he muses. "Basic demographic growth and decline?" Whatever it was, about 1,300 years ago, what had been an apparently prosperous village of at least five houses and maybe 200 people was abandoned.

"I don't think it was catastrophic," says Grier. At least he has found no such indication.

The people who lived here, like other Coast Salish, married outside the village, but had the option to live in the home village or with a spouse's parents. A couple might go back and forth. It's hard to imagine that eventually all the young people decided to live in a better-located village. Perhaps the village ran up against a labor shortage? Who knows?

These are among the many questions Grier is asking. How are households sustainable? How do they reproduce themselves socially, biologically?

His work here has also added to the understanding of the role of feasting in such cultures. Feasting is considered a critical mechanism "through which individual status is constructed, group solidarity reinforced, and extra-local alliances established and reaffirmed. As such, it is an important social practice in small-scale societies."

Grier suggests I walk around Stevens Point. So I do, and what I see is just what he had promised, layers of land- and seascape, a couple smaller islands, high mountains to the west on Vancouver Island, a look through the Hul'qumi'num world.

It is these successive layers, this view of these ancient people, as we perch on the rim of their world, upon which he reflects.

"I've worked here 15 years," he says, "and I'm only starting to understand how to phrase some of these questions." ☒



Opposite: Drawing of the Dionisio Point village as it may have looked 1,500 years ago. *Illustration Neil Miller.*
Above: Mussels on Galiano Island. *Photo Nora Melzer*

For more "Salish Sea 2" by David Ellingsen go to wsm.wsu.edu/gallery.

by Eric Sorensen

If the world of cutting-edge research has a glamorous side, it was lost on Laurel Graves this summer as she found herself digging trenches for soil probes on the Cook Agronomy Farm north of Pullman. In the high summer heat, Graves dug for two hours. Palouse soil covered her arms.

It was a hard-earned insight into the nature of science.

"You mean I'm not doing complex equations constantly?" she wondered. "Oh wait, I've got to be a farmer for a while."

She was not alone in the grunt work department. Jeronda Hunt wrangled scores of petri dishes harboring white, smelly bacteria. Naeh Klages-Mundt spent three weeks looking at page after page filled with line after line of genetic code: ACGT, GCTA, GTCA, and so on.

And in a boneheaded move familiar to most every novice cook and veteran lab tech, Klages-Mundt mistakenly tossed out a DNA sample, costing himself the previous 24 hours of work.

"The one good thing that comes from that," he philosophizes, "is throughout all my time in biology in the years to come, that will never happen again."

So who are these scientists, embracing dirt, slime, and crushing repetition for a chance to chip away at global warming, a potato bacteria, and a fungus threatening the world's wheat crop?

Undergraduates. Or, to be more precise, undergraduate researchers.

An undergraduate's bench time used to be limited to following recipe-like instructions for the lab requirement of a science class.

Undergraduate lab jobs rarely got more sophisticated than washing bottles.

"A lot of faculty believed in the past, and I have to say sometimes they still do, that undergraduates don't know enough yet

to do research," says WSU's director of undergraduate research, Shelley Pressley '99 MS, '04 PhD.

But with the right mix of guidance and opportunities, say Pressley and other WSU faculty, undergraduates can tackle some fairly sophisticated scientific problems and get results worthy of posters, presentations, even publication in a peer-reviewed journal.

Along the way, the students, mentors, and the university itself accrue a host of benefits. Students engage with the material, observe potential role models, and learn more about their fields, the art and craft of science, and themselves. Faculty get help with projects. The university attracts and retains more students while bolstering its missions of research, teaching, and outreach.

All of which could be seen this summer when more than 50 students from WSU and schools around the country came to the Pullman campus for the summer research experience funded by the National Science Foundation, USDA, and faculty research grants. The students' mission: Working one-on-one with faculty mentors, tackle an original real-world research question or problem with an eye toward presenting their findings.

"These are not hobbies," Dave Bahr, WSU's first director of undergraduate research and a professor of mechanical and materials engineering, told them as they assembled on their first day. "These are things we really want to get finished."

And in a flourish befitting a reality TV competition, the whole process—from clarifying the question to setting up equipment to gathering data to drawing conclusions and making a paper, poster, or presentation—had to be done in a little more than nine weeks.

ON THE WAY to their field site, Laurel Graves and Heather Baxter stop for supplies: paper bags, a one-meter-square steel hoop called, fittingly, a square meter, and curved, razor-toothed Japanese rice knives.

"You really don't want to touch them," says Graves, an Arlington junior majoring in engineering. "I've cut my fingers a few times."

"Me too," adds Baxter, a fellow engineering major and senior from Stanwood.

With Sarah Waldo, a doctoral student in the Laboratory for Atmospheric Research, they drive up to the Cook Farm and walk through a field of small-headed club wheat to a flux tower, a framework of air samplers and wind gauges. Crops are for the most part climate-change



mitigators, tying up more carbon in the soil than they put into the air, but scientists don't know how much, explains Waldo. Graves, Baxter, and Waldo aim to help find out by measuring how much carbon dioxide this crop consumes and releases. The flux tower measures the air, compiling tens of thousands of data points a day; the researchers regularly harvest wheat plants, dry them out, and calculate how much carbon and nitrogen go into their biomass.

"This is one of the first projects in the United States looking at the greenhouse gas dynamics of wheat," says Waldo.

At that, she looks at her fellow researchers and says, "You want to divide and conquer?"

They divide up bags, grab rice knives and square meters, and head off, taking pains to avoid trampling the crop.

Not long ago, an undergraduate wouldn't get near a test plot, let alone put his or her hands on a rice knife.

"Historically a lot of them were washing bottles and being the shadow of a grad student or postdoc," says Pressley, herself a veteran of an undergraduate research program.

But starting in the 1980s, universities began increasing undergraduate research opportunities, if only to stem students' declining interest in science majors. In 1995, the Carnegie Foundation for the Advancement of Teaching created a commission to investigate how research universities in particular might better educate undergraduates. The first recommendation of the commission's Boyer Report: "Make research-based learning the standard."

"Undergraduate education in research universities," it said, "requires renewed emphasis on a point strongly made by John Dewey almost a century ago: Learning is based on discovery guided by mentoring rather than on the transmission of information."

The Boyer Report was echoed on the WSU campus less than a decade later when a consultant on undergraduate education noted that colleges and universities were embracing "active, inquiry-based learning." At his suggestion, WSU in 2006 created the office of undergraduate research and appointed Dave Bahr as its director.



At the time, says Bahr, WSU had a dispersed "grassroots" system of undergraduate research.

"These programs come and go," he says, "because they take a big administrative load and they're a hassle, but they pay off in the long run for the university in terms of recruiting and in terms of visibility."

Bahr himself started WSU's first Research Experience for Undergraduates, a National Science Foundation-funded program, in 1999. It focused on materials characterization, and from that helped other departments—electrical engineering, chemistry, mechanical engineering, and atmospheric research—with similar programs. Summer research spread into the regular year to where between one-eighth and one-fourth of WSU students help with some sort of inquiry.

Firm figures are hard to come by, but Bahr estimates the number of student researchers has probably doubled since 1999. It also helped improve the retention of those students from 40 to 85 percent.

"It appears that undergraduate research helps people feel more connected to the process of being engaged in their education," says Bahr, who left WSU this fall for a position at Purdue University. "It helps in critical thinking. It helps in presentation. It helps in leadership skills. Undergraduate research ends up helping in all the things that, when companies hire people, they say they want."

As the movement toward more undergraduate research got under way, universities had an "aha moment," says Pressley: Student researchers were more confident and more likely to stay in their field, or at least graduate.

"Because they started to see the application of what they were learning in a real-life problem," she says. "It became more than a textbook. It wasn't, 'I'll have to learn the periodic table.' Who cares about the periodic table? But when they start relying on that to solve a problem, it becomes real and it becomes important."

"It's not really school anymore," says Graves after harvesting her day's square meter of wheat and putting it up to dry. "It's something that's actually going to affect the people around you. I feel a heightened sense of responsibility in producing good research."



Opposite, left to right and this page: Arlington engineering junior Laurel Graves (far left) and other student researchers help compile reams of data to gauge a wheat crop's role in climate change. *Photos Zach Mazur*

Below: Researcher: Abdon Godinez-Velasco / Home Institution: Yakima Valley Community College / Faculty Advisor: Gaurav Ameta—Flatness Evaluation For V-Flash Rapid Prototyping Covariance Method. *Photo Robert Hubner*



"Global climate change has always been kind of a scary idea, but something just scientists worry about," she adds. "This is something that I have to think about now."

THE DOWNSIDE of solving problems is that, if they were easy, they wouldn't be called problems. Most every researcher, undergraduate and otherwise, has to wrestle with that reality.

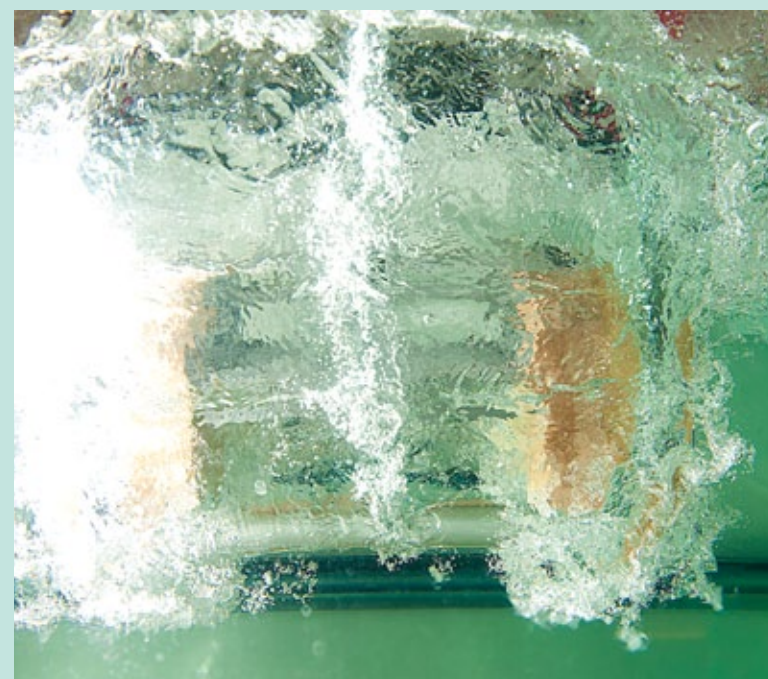
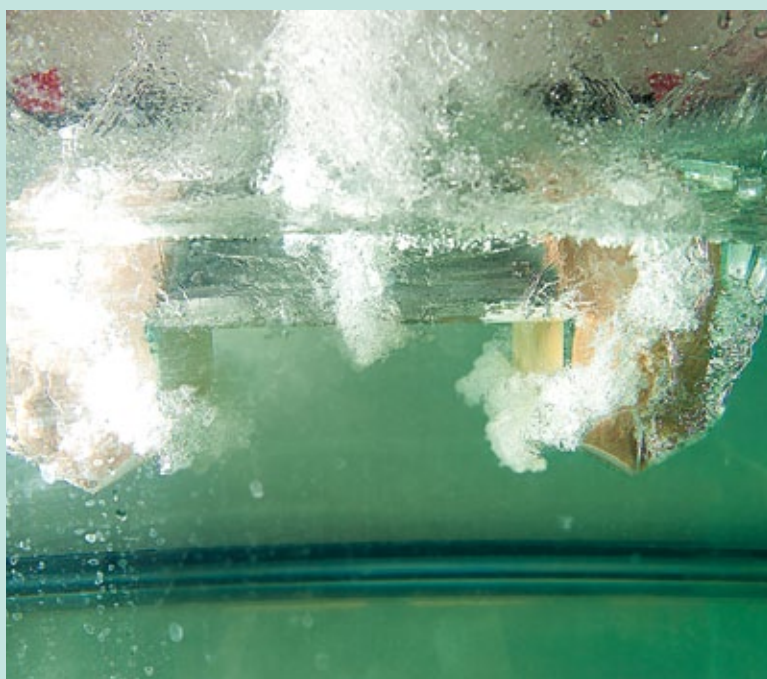
For summer students with just nine weeks to tackle a problem, it's even more bewildering.

"There's been a lot of trial and error, that's for sure," says Cassie Smith, a WSU junior from Marysville. "One of my professors told me I put the 're' in 'research.'"

Smith's early research attempt in the summer of 2011 was not just a complete bust. It was an explosion.

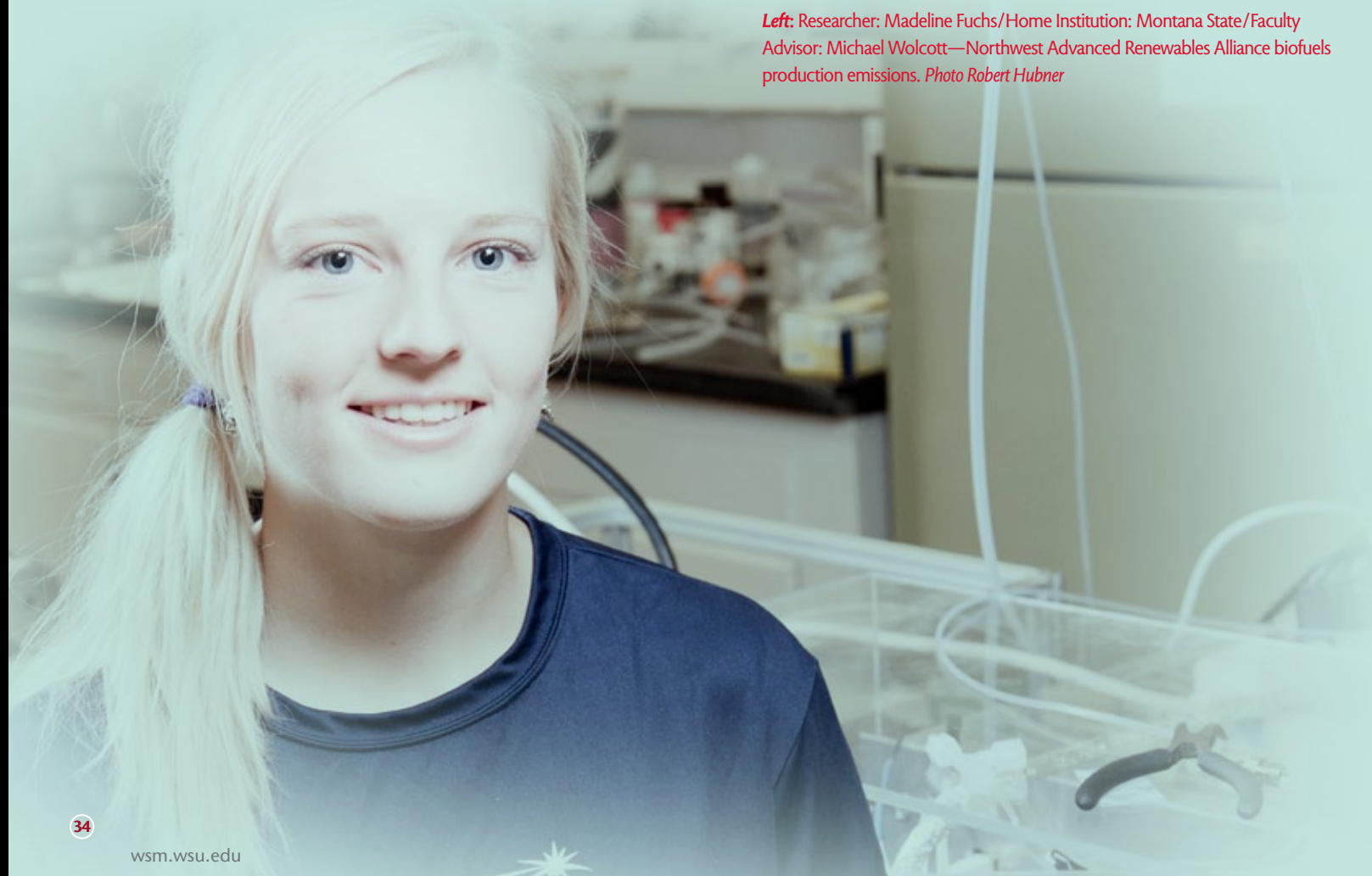
She tried to build her own oven for growing carbon nanotubes, molecular-scale tubes with phenomenal strength. By accident, a flammable gas inside a bell jar apparatus blew up, sending one large, heavy bell jar four feet in the air. No one was injured.

This year, she used an off-the-shelf furnace and made carbon nanotube mats, spaghetti-like structures that fall over and interweave as they grow. The problem is, she was trying to make more vertically oriented turfs. In a variation of making lemonade with a lemon, she compared the properties of the two and found that, while different structurally, they may have comparable applications.



Above, left to right, opposite: Researcher: Andrew Robinson/Home Institution: Washington State University/Faculty Advisor: Konstantin Matveev—Wave slamming in multi-hull air-assisted marine vehicles designs. *Photos Robert Hubner*

Left: Researcher: Madeline Fuchs/Home Institution: Montana State/Faculty Advisor: Michael Wolcott—Northwest Advanced Renewables Alliance biofuels production emissions. *Photo Robert Hubner*



She also learned something about herself.

"It's very important to have patience if you're going into research," she says. "Persistence is key. And there are endless things to learn. I'm never bored. It's endlessly interesting. There's something new to learn every day."

Bahr bore witness to Smith's struggles—he acted as her mentor—as well as the false starts of dozens of other students. He now sees the process as a narrative arc in which the learning curve is steepest at the start, consuming 150 hours—about three weeks—before things start to make sense.

Next, he says, "is this crazily effective crystallization of ideas coming together, and people all of a sudden talk about what they did in an articulate manner. It's been remarkable to me over the years to see the patterns."

Along the way, the students see first-hand the core elements of the scientific pursuit: the snafus, the need for vigilance, the creativity, the blend of independence and teamwork, the satisfaction of being on the frontier of knowledge, and the Sisyphean feature of two questions emerging for each one that gets answered.

Andrew Robinson, a mechanical engineering senior, consistently heard students complain of things going wrong. He had similar feelings when he first started doing research during the regular school year nearly two years earlier.

His skills have clearly improved, as evidenced by a six-foot-tall water tank in which he could drop a small catamaran and measure accelerations as it hits the water. He only needed to measure something lasting 40 milliseconds, but he knew he would have to spend weeks on his setup and days looking at an Excel spreadsheet.

He was chiefly interested in vertical shocks on the hull, but he had to spend two weeks reconciling how to deal with some mysterious horizontal acceleration.

"You just have to find out how to make it work," he says. "When most students figure that out, it gets fun again."

In the end, he had a piece of research that, judging by his literature searches to date, is unique for that type of hull.

"I've looked pretty hard," he says, "and the harder you look for a paper on the same subject and the less you find, the cooler it gets."

Laurel Graves, the undergraduate atmospheric scientist and occasional farmer, echoes the thought.

"I really like the idea of being able to direct my own project and do something that no one else has done before," she says. "Just saying that is, like, 'Woah, I can't believe I'm doing this.' The entire world, all 7 billion people, and we're the only ones doing this thing. It's kind of a crazy thought."

NOT EVERY undergraduate researcher succeeds, at least not technically. Not all will co-author a paper or present work at a national meeting, although one-third of Bahr's students do. Others may find that research simply isn't for them.

"They are realizing that, while they are finding those little treasures and clues, there are definitely some detours sometimes," says Amit Dhingra, a horticultural genomicist who has more than a dozen undergraduate researchers in his lab each semester. "I try to convey to them that that's part of it."

The detours can also include outright failure, but Dhingra tries to redefine that word.

"It just means that part is the wrong direction," he says. "It's like you're in a maze. You just turn around and come back."

"What I learned is, first, you have to be humble," says Jeronda Hunt, who spent the summer in plant pathologist Brenda Schroeder's lab sequencing bacteria that attack potatoes. "You're going to make mistakes, and that's part of science. Once you mess up, you got to start over. Usually, a lot of people don't get that. They just think, I don't have my results. That's it. But there's always a different technique to get whatever results that you want to have. I learned that, instead of using just one method, use several methods to get what you need."

Maddy Fuchs, a Montana State University senior from Spokane and 400-meter hurdler, had it particularly tough, starting three weeks late as she filled in for a student who didn't come. She expressed an interest in biofuels and atmospheric pollution, so she was placed with the Northwest Advanced Renewables Alliance.

The WSU-led effort aims to create aviation fuel from wood using some of the same processes used by pulp mills. Fuchs set out to estimate what emissions to expect, using data from a mill in Bellingham and her own small-scale laboratory experiments with a reaction vessel and two mass spectrometers.

"I'm not necessarily behind," she said in the final weeks of the summer, "but I don't have enough time left."

But on a morning in early August, Fuchs was one of dozens of smartly dressed students standing alongside posters with often convoluted, cryptic titles and their names as lead author. Hunt's poster showed that she had isolated about 30 benign bacteria from diseased potatoes and found one, *Pectobacterium wasabiae*, which leads to the diseases blackleg and stem rot. Robinson's poster described several ways a hull can get slammed. Other posters talked about silenced genes, a possible treatment for *E. coli* on apples, a genetic analysis to determine cherries that can cross with a specific variety of sweet cherry, and the risks of arson to piles of biomass.

And there in a corner of the Smith Center atrium stood Fuchs and a poster identifying more than half a dozen compounds among the scores of compounds produced in her reactor. Mike Wolcott, her mentor and co-director of the renewables alliance, said ring structures among the compounds she identified suggests they have potential as structural materials or aromatics for flavorings.

In the process, Fuchs, who started out with no engineering experience, says she became more self-directed and confident.

"I realize that, given another opportunity, I could jump into this and get it done, obviously with the help of other people," she says. "I feel a lot more confident now."

For all its frustrations, many students are inspired by the research experience to go in whole new directions.

Originally, Alejandro Prieto returned to school for some quick retraining and a return to the workforce after Army tours in Iraq and Afghanistan and technician jobs for communications companies. But two summers ago he did a research program that had him learning about wind trajectories and measuring ozone and carbon dioxide on a mountain in Colorado. The instruments kept showing strange spikes in CO₂. No one, including students from Yale and Princeton, knew what was going on. Then Prieto, the guy in his early 30s from Bronx Community College, wondered if there might be some forest fires upwind. He was right.

"It opened my eyes," he says, "and I said, 'I can actually continue.'"

Now he's aiming for a PhD. He's only one of the latest to feel that way.

Marian Kennedy '02 BS, '03 MS, '07 PhD thought she was just getting a summer job when she signed on for Bahr's first summer research program back in 1999. She figured it would help pay for school and kill time between the spring and fall semesters. She organized research, worked on complex problems, and found she could actually add to the body of knowledge about materials science. Moreover, she learned she liked it.

Now she's an assistant professor of materials science and engineering at Clemson University. She's also directing a summer research program, where she says she hopes to "achieve the same transformation in the students who walk through our doors." ☒



Below: Researcher Alejandro Prieto/Home Institution: Bronx Community College/Faculty Advisor: Heping Liu — Measurements of the Surface Energy Budget and Carbon Dioxide Fluxes Over Complex Terrain Using an Eddy-Covariance Method. Photo Robert Hubner

Read about undergrad research at wsm.wsu.edu/extra/undergrad-research.



» In 2012 the Thomas S. Foley Institute for Public Policy and Public Service, in conjunction with the School of Politics, Philosophy, and Public Affairs, began a new public symposia series that focuses on the ethical and public policy ramifications of new scientific innovations and knowledge. Each semester the symposia, which are open to the public, bring together WSU faculty with other internationally prominent scholars. The first in the series, "Ethics and Global Climate Change," was held in April 2012, and brought to WSU's campus Andrew Light, director of the Center for Global Ethics at George Mason University and a fellow at the Center for American Progress. Other panelists included Eugene Rosa, the Boeing Distinguished Professor of Environmental Sociology at WSU; Kent Keller, professor in the School of Earth and Environmental Sciences at WSU; and William Kabasenche, associate professor in the School of Politics, Philosophy, and Public Affairs. The series will continue during the fall 2012 semester with a symposium focusing on ethical questions surrounding reproductive rights and religious freedom. For more information you can contact the Foley Institute at relgar@wsu.edu.

The equity dilemma

Andrew Light

IT SHOULD BE CLEAR FROM THE OTHER CONTRIBUTIONS TO THIS FORUM that by its very nature the problem of global climate change requires a global solution. Once this reality is accepted then an immediate question is how to most equitably distribute the obligations for reducing emissions to safer levels. After being absent from international climate negotiations for some years now, determination of the most equitable distribution of greenhouse gas reductions is now back on the table.

The global community has been working on the creation of a comprehensive treaty to reduce greenhouse gas emissions to safe levels for the past 20 years. The first climate treaty was proposed in 1992 at the Rio Earth Summit in Brazil, leading to the creation of the United Nations Framework Convention on Climate Change (UNFCCC), which was ratified by 194 parties, including the United States.

But while it represented a landmark piece of diplomacy at the time, the UNFCCC only called for voluntary reductions in greenhouse gases and so was considered by most parties to be inadequate to help to solve this problem. Since that time this

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body has been struggling to create a binding treaty that could achieve the reductions in these gases which the scientific community believes is both feasible and adaptable by most countries. The chief sticking point, though, is finding the right balance of responsibilities among various parties.

The only guidance provided by the language of the framework convention was that the assembled parties shall have "common but differentiated responsibilities" to reduce their emissions. This phrase has been interpreted as meaning that while all greenhouse gas polluters have some obligation to reduce their emissions, these responsibilities are different based on (1) their historical emissions and (2) their development needs. Historical emissions matter because the main anthropogenic greenhouse gas—CO₂—depending on the source, continues to force increases in temperatures for hundreds and sometimes thousands of years. The almost one degree Celsius of global warming humans have caused so far is due largely to the emissions produced by today's developed world. Development needs matter because the often crushing poverty still experienced in many parts of the developing world may require a slower transition from dirtier carbon-intensive fuels, which still tend to be cheaper than cleaner fuels.

Unfortunately, all efforts so far by the UNFCCC to create a binding treaty that both reduces emissions to safe levels and creates a formula for distribution of them that all parties can agree upon, have failed for various reasons. While the framework convention created the Kyoto Protocol in 1998, the interpretation of common but differentiated responsibilities embraced in this agreement only legally bound developed countries to reduce their emissions, while developing countries were only asked to enact voluntary measures. Because of this perceived imbalance in responsibilities, the United States never ratified Kyoto. Since the United States is the second largest emitter of greenhouse gases (now behind China), and is still the largest historically, it's difficult to imagine a workable international climate regime which does not include the United States as a full participant. It's also impossible to achieve the reductions necessary to stop at

some level of relatively safe warming without the participation of the biggest emitters in the developed and developing world.

Last year at the UNFCCC's annual summit, in Durban, South Africa, an effective reset was called and the parties agreed to start a three-year process to create a new climate agreement that would have the same legal force for all parties. Beginning this November, at the next meeting of the UNFCCC in Qatar, the parties will begin to create the language of a new treaty, which, if successful, will go into effect soon after 2020.

It is in this context that the issue of equity is being discussed once again. The conversation started this past spring at an intercessional meeting of the UNFCCC in Bonn, Germany, where a two-day workshop was held on equity in sustainable development. Already, though, old divisions that have haunted these talks have re-emerged.

A key problem is that many influential developing countries continue to take the UNFCCC mandate of common but differentiated responsibilities as the only acceptable outcome for division of responsibilities for reducing emissions. This has led them to embrace some solutions which effectively grant the right to all countries to emit some greenhouse gases into the atmosphere as a right of development. While there are many forms of this argument, they tend to look something like this:

1. Start with an assumption that the global commons can only absorb X trillion tons of carbon before reaching unacceptable levels of global temperature increase.
2. Divide X by the global population and allocate an equal amount of emissions for all on a country by country basis.
3. Subtract the amount any country has historically emitted (back to an accepted baseline) from its total allotment based on population.
4. From 2 and 3 assess the amount of future emissions allowable for each country starting now, expressing these positive allowable emissions as an emission right or "development right."
5. If a country has already emitted more than its fair share of CO₂ into the atmosphere over its history (such as the United States in all of these treatments), then it has a "carbon debt"

and must either radically reduce its emissions to zero or compensate those countries which have not emitted their fair share of historical greenhouse gases for holding back on the emissions they still have a right to emit.

We can see this reasoning at work in various communiqués over equity in the climate talks. In a submission to the convention on October 10, 2011, the Indian government put the point this way: "Equitable access [to sustainable development], for its part, must derive from the notion that all human beings have an equal entitlement to the global atmospheric space, and that in determining just shares of the remaining atmospheric space, past usage (or over-usage) of the global atmospheric space must be taken into account." As one might imagine, the United States, and some other developed countries, have categorically rejected this idea.

Rather than weighing in on one side or another of these debates, here I only want to point out one significant hurdle that any scheme such as that just described would have in order to be accepted by the United States. If the United States were to sign onto an international treaty that accepted such a notion as outlined earlier, it could potentially dismantle the current basis for regulating these substances at home. The Indian submission describes greenhouse gases as the source of a positive right, a resource if you will, rather than as a pollutant. At present the only basis for regulation of CO₂ in the United States is in negative terms as pollution.

The origin of this designation goes back to the 2007 Massachusetts v. EPA decision (549 U.S. 497). There, the Supreme Court ruled in favor of 12 states and several cities which had sued the Bush Administration over its refusal to determine whether CO₂ and other greenhouse gases constituted pollutants under the Clean Air Act. In the 5-4 decision the court determined that global warming could present a potential threat to these states and cities for various reasons, and so the EPA was required to undertake an "endangerment finding" to determine if these substances needed to be regulated to protect the health and safety of Americans. While the Bush administration never started the process of producing this finding, the new Obama administration started the process a few months into its first year and announced in December 2009 that these gases did meet the standard of a dangerous pollutant under the Clean Air Act.

While the Obama administration was making this executive determination, the U.S. Congress was trying to pass a comprehensive energy and climate bill. Unfortunately, while the House version of this legislation (the “Waxman-Markey” bill) passed, companion legislation in the Senate never even made it to a floor vote. As a result, the determination of greenhouse gases as a pollutant under the Clean Air Act became the “plan B” for the United States for joining the rest of the world in reducing its emissions. The results have been impressive, with EPA regulations passed on the basis of this authority to limit emissions from mobile sources, new stationary sources (particularly from coal-fired power plants), and most likely existing stationary sources if President Obama is reelected.

Nonetheless, many environmental critics of the administration find these regulations to be insufficient to meet the United States’ global responsibility to reduce our emissions given the amount we have historically emitted. But no matter how much one may disagree with these efforts, it is undeniable that the authority to regulate greenhouse gases in the United States stems from a description of them as harmful pollution. Since the 2010 midterm elections there have been numerous attempts to overturn the authority of the EPA in Congress and all have failed by narrow margins so far in the Senate. If the Obama administration were to embrace a global treaty that defined greenhouse gases instead as the source of a positive right, then it would undermine its defense so far of this authority, or force it to defend a contradictory conception of the same set of substances in two different arenas.

While this consideration is not absolutely defeating for embracing something like a greenhouse development rights approach to equity in the international climate negotiations, it does at least demonstrate how a new treaty has to grapple with a delicate combination of philosophical and practical considerations that are made all the more difficult by national circumstances. While in the abstract there may well be an optimal allocation of global reductions in emissions, the reality is that a global environmental treaty may not be the best vehicle for carrying that allocation forward.

Pointing out tensions like these, though, does not mean that a new equitable, workable, and effective climate treaty is beyond our reach. Over the next few years we will see the emergence of several cooperative efforts among state actors and NGOs to try to produce a more flexible, less abstract notion of

climate equity that has the potential to represent a consensus of views on a fair outcome allocation of global responsibilities to address this challenge.

A geologist’s view

Kent Keller

WE ARE CHILDREN of the Pleistocene. From a geological perspective the past two million years of Earth’s history are characterized by the cyclic alternation of ice ages interspersed with relatively short warm periods (the last one of which, the Pleistocene, allowed agriculture, animal life, and human civilization to flourish). The Pleistocene coincides with the rise of our species, and every aspect of us, from DNA to culture, has been sculpted by its climate cycles. Indeed, climate change, over and over, is the rule of human existence. Yet these climate cycles have occurred within a remarkably resilient Earth-system climate framework: Pleistocene temperature variations have rarely exceeded 10 degrees C on a global basis over a full 100,000-year cycle. Such resilience has characterized Earth’s climate far back into deep time, sustaining life here continuously since its dawn at least 3.7 billion years ago.

Against this backdrop we must now consider what, if any, role humans have in altering Earth’s climate. Scientists with expertise, as in any field, have a particular ethical responsibility to carefully make interpretations of available data, to place our interpretations within context of the larger scientific community, and to explicitly acknowledge and describe uncertainty. Recent studies that contain billions of carefully-filtered data show unequivocally that Earth’s land surface has warmed about 1 degree C over the past 100 years. This trend is highly likely to accelerate over the coming decades. Our best models, incorporating the mechanisms by which sunlight is processed by Earth’s atmosphere, biosphere, and oceans, indicate that our greenhouse gas (GHG) emissions to the atmosphere are substantially responsible for these changes. There is great uncertainty regarding how the climate system will respond to our unprecedented and presently uncharted path of GHG emissions on centennial and longer timescales. Much of this uncertainty is due to our rudimentary understanding of a vastly complex climate system. These views regarding the nature and probable causes of changes to Earth’s climate, as well as the admission of uncertainty about how the climate system will respond, are fully in the mainstream of geologic and climate science.

What ethical and policy conclusions should be drawn from this? As ever, we all owe each other the fundamental responsibilities of citizenship: to learn as best we can about how the world works, and to make choices based on open-minded, critical inquiry, with due consideration of others with whom we share the planet. As we relate to climate, I believe that the obligations of common citizenship surely point us to a position of humility. Acknowledging our ignorance, we should engage in “intelligent tinkering”; that is, mitigate and adapt carefully, without sacrificing Earth’s subsystems or their parts. In practice this means erring on the side of caution by minimizing our disturbances to atmospheric chemistry, hydrologic and nutrient cycles, and plant and animal extinction rates, among other Earth processes.

The hardest work, and perhaps the critical ethical obligation in “climate citizenship,” is to join in the building of sociocultural resiliency at all scales. Sustaining soils and producing healthful food requires functioning communities and sound choices at a smaller set of scales than does managing the GHG composition of the atmosphere. More and more of us must contribute to all of this, leading in some cases, following in others.

Expert opinion

Bill Kabasenche

SKEPTICISM about climate change is one of the striking features of the public debate over this issue. But few of us are climate scientists who can claim expertise regarding the relevant projections. Two important ethical claims follow.

First, those of us who are not experts in this area seem to have some kind of ethical obligation to take seriously views of those who are experts—perhaps even an obligation to defer to consensus expert judgment in these matters. Second, experts would seem to have a variety of individual and collective responsibilities regarding how they conduct their research, how they portray their collective and individual views, and how they treat one another within the scientific community. If we who are nonexperts must trust those who are, then we want to know, for example, that their funding sources aren’t inappropriately influencing a variety of judgments scientists must make about what questions to study and what experimental designs to employ, and so on. We’ll also want those with views not in the majority among experts to say so frankly. And we’ll want to know that scientists who sincerely promote an outlier view are treated with the kind

of respect that acknowledges that they may offer an important qualification of the received view.

Assuming that something like the dire projections of most climate scientists are correct, what ethical responsibilities follow? One intriguing line of thought might go as follows: The United States has gained an economic advantage in the world through emissions that we now know could harm all of us through global climate change. Therefore, we have a proportionately greater responsibility to curb emissions, making the sacrifices necessary to do so, and also a greater responsibility to research and disseminate any possible remediation technologies, assuming we can do so without imposing unacceptable risk on others.

Some proponents of this line of thought will distinguish between luxury emissions and subsistence emissions and argue that we should give priority to the latter under dire conditions. Another possible implication of this “you’re responsible for your mess” argument might be that the United States should develop and freely (or cheaply) disseminate technologies that would allow all of us to limit our harmful emissions without drastically changing our lifestyles. Of course, the history of World War II victory gardens might encourage us to think there is in the United States the kind of resolve that would enable us to make some important sacrifices in an effort to protect the well-being of others.

Some have suggested we might avert trouble if we could geo-engineer certain aspects of the earth’s climate. Suggestions range from seeding the ocean with iron filings to stimulate plankton growth, thereby sinking a lot of CO₂ into the ocean, to placing mirrors in space to reduce the amount of solar radiation reaching earth’s surface. These proposals vary in terms of expense and also in terms of risk. And they also raise ethical questions, such as what the appropriate amount of precaution to exercise is when faced with high risks through action or inaction, or how we might gain the consent of all those who might be affected by such broadly impacting projects. All of the above questions are, of course, the focus of ethicists working in these areas.

Minding the gap

Eugene A. Rosa

ANYONE WHO HAS RIDDEN the London Underground—the “tube” to Londoners—has heard the repeated loudspeaker reminder to “mind the gap.” The warning is a risk man-

agement message to prevent passengers from tripping in the space between the platform and train car. A failure to mind the gap can have grave consequences.

A far more serious social and political gap has emerged in society, presenting unprecedented challenges for science-based governance. The gap consists, on the one hand, of the institutional constraints on scientists for bridging the gap between science and ethics and, on the other hand, of the challenge of addressing the growing divide between rapid advances in science and technology and the inevitable risks they generate.

The first had its roots in a centuries-old, universally held worldview. From roughly the fourteenth until the twentieth centuries the dominant view—attributable to Medieval scholar Nicole Oresme—was the shared imagery of the perfection of the universe by scientists and citizenry alike. That image of perfection in the cosmos was captured by Oresme in the metaphor of its status as a grand, perfectly functioning clock.

It was a short step to look at this perfection as a yardstick for judging ethical issues. If God was perfect, a rock-solid belief, then His creation, the universe, must be perfect, too. It followed, then, that if nature was operationally perfect, why not look there to develop systems of ethics with its underpinning of perfection. And many scholars did. However, the quest to translate the operations of nature into ethical codes encountered a serious bump in the road—a bump that would later become a pot-hole—the “gap”—for science. The bump appeared in the form of a 1903 book, *Principia Ethica* by Cambridge philosopher G.E. Moore, considered by sociologist Robert Merton as possibly the most influential book of the twentieth century. Moore developed a compelling argument demonstrating a logical fallacy—the naturalistic fallacy—when drawing ethical principles from nature’s operations, however perfect. In short, there was no logical way to take the observations of nature via categorical statements and convert them to ethical prescriptions via normative statements.

This conundrum for philosophy would create even more mischief for science. The place of mischief was 1920s-1930s Vienna, Austria. It was there that a distinguished group of philosophers, logicians, scientists, and mathematicians who called themselves logical positivists met regularly around a unifying topic: how to distinguish science from other systems of knowledge. The key logical quest was to look for a rule, a demarcation rule, for distancing science from other systems of knowledge. The first element of this rule was

the is-ought separation codified by Moore. The rule was further elaborated to demarcate between pure logic (including mathematics), referred to as analytic statements that reduced to tautologies, and synthetic statements that were amenable to empirical verification. All other statements were metaphysical and, therefore, not scientific and of little use in generating knowledge.

Despite changes in logical positivism over time, two key components remained: (i) a commitment to evaluating theoretical statements on the basis of empirical evidence and (ii) an avoidance of ethical judgments. In the light of basic changes in science and society in the twentieth century, the ethical avoidance principle has become ever more difficult to sustain.

Two key developments in science have challenged the ethical avoidance principle rule (ii) and account for the challenge of minding the “gap.” The first is the transformation of science as an institution comprising a collection of quasi-isolated and devoted investigators to an enormous enterprise with much of its service to government. The single effort most responsible for this was the Manhattan Project, whose products were not only a breakthrough in subatomic physics but also in the technology of unprecedented destruction—the atomic bomb. More important, the destructive magnitude of the bomb was a harbinger of the human capacity to destroy the entire plane. It was a harbinger of a growing number of topics at the horizon of science that are embedded with “grand” risks; that is, risks of potential global reach and of incalculable consequence—including the extinction of the human race.

The magnitude and pace of global climate change is now the exemplar of this new era of risk, bearing all the characteristics of the “grand” risks that punctuate our age. Warming the planet is truly global in scope with incalculable possibilities and outcomes that could potentially wipe out human and most animal species. It embeds numerous ethical challenges that bring into sharp relief the science-ethics “gap.” It raises questions such as the proper trade-offs between devoting resources to mitigation versus adaptation, between protecting more versus less vulnerable societies, and between the needs of current versus future generations. Addressing such gap questions, then, is the key ethical challenge for science: namely, how to conduct valid scientific research while offering recommendations for proper policy and action in the light of its findings. Whether science is up to the task is a major policy challenge of our age. ☒

Indian Law Attorney Brian Gunn pushes into new territory for his tribe and others

by Hannelore Sudermann :: photos by Zach Mazur

» **IN THE SUMMER OF 1951,** a Colville Indian named Peter Gunn sued the United States government for the loss of a portion of his ancestral lands. He joined members of a number of other tribes including the Lake, San Poils, Methow, Okanogan, and Nespelem, all living on the Colville reservation and whose homelands, which once covered nearly half of Eastern Washington, had been given to the public for settlement in the late 1800s.

Two generations later, Gunn's grandson Brian, 38, filed another suit against the U.S. Department of the Interior, this time for the mismanagement of the remaining lands on the Colville reservation, most of which are held in trust by the federal government. And this time, the suit resulted in one of the largest Indian settlements the federal government has ever made.

The Gunn family has a long history of action and activism on behalf of the Indians of north-central Washington. Peter Gunn was a founding member of the Colville Business Council. He was also a police officer, game agent, and often a person to whom members of the community could turn for help or advice. He was well liked and trusted, the only council member to ever be elected from each of the four districts. Even his death, in 1953, came during service to the tribe. He suffered a stroke during a council meeting.

Brian Gunn's father Virgil served on the business council in the 1970s and testified before Congress on education and health issues. Now Gunn '95 is a Washington, D.C.-based Indian law attorney and lobbyist working for tribes and tribal businesses around the country.



Overleaf: Silhouette of sculptures by artist and tribal planner Virgil Marchand on State Route 155 in Nespelem. **This page:** Brian Gunn at Omak Lake.

WE START OUR VISIT at the Okanogan River which, like Gunn’s career, winds itself through and then out of the 1.4 million-acre reservation. It is a stark and stunning landscape of Eastern Washington endowed with rivers, lakes, farm and rangeland, and pine-filled forests. Gunn meets me in the early morning at the Omak Stampede grounds, on the western edge of the reservation. A member of the Colville Confederated Tribes and a WSU alumnus, he was named one of the *National Law Journal*’s “Minority 40 under 40,” and most recently made headlines as the lead attorney in a suit against the federal government for mismanagement of Indian trust land and resources—not only on the reservation where he grew up, but a number of other reservations around the country.

Dressed in a crisp button-down shirt, jeans, and loafers and holding a paper cup of coffee, he looks more like a D.C. lawyer on a weekend than an Omak local. Still, his high school is just across the river and the tiny house where his grandmother Bertha lived is a few blocks away.

Though Gunn spends most of his time in the offices and conference rooms of Washington, D.C., he makes a point of coming home several times a year. It’s a time to reconnect with his friends and family as well as the people he serves as the tribes’ attorney and federal lobbyist.

The Confederated Tribes of the Colville Reservation

Methow : Had homelands east of the current reservation in the Methow River valley.

Okanogan : A very large group that occupied both sides of the Washington/Canada border. The Washington-side organized under Chief Tonasket.

Arrow Lakes : The homelands covered north-central Washington along the Columbia River and up into Canada.

Sanpoil (or San Poil) : Traditionally had villages along the Sanpoil and Nespelem Rivers.

Colville : Had traditional ties with the Kettle Falls fishery as well as the Columbia and Colville Rivers. The tribe was put on the reservation in 1872.

Nespelem : Lived along the Nespelem River and the upper reaches of the Columbia.

Chelan : Had permanent villages in the lower Chelan valley. Followed Chief Moses to the Colville reservation.

Entiat : Fished and lived along the Entiat River, then joined the other Chief Moses Tribes on the reservation.

Moses-Columbia : The band lived in Central Washington and, led by Chief Moses, were relocated to the Colville reservation in the 1880s.

Wenatchi : Traditionally occupied the region near the confluence of the Wenatchee and Columbia rivers. Most were forced with the Entiat, Chelan, and Columbia onto the Colville reservation.

Nez Perce : Descendants of Chief Joseph and his small band of followers who were forced to settle away from their Idaho homelands and away from their rest of the Nez Perce, arriving on the Colville reservation in 1885.

Palus : Lived and hunted in Eastern Washington and Northern Idaho, lived along the Palouse River and were known for horse breeding.



From left: Brian Gunn greets a friend from high school. Horses gallop across the steppe on the Colville reservation. Jasen Wellons of Keller and his daughter Shelby Mustang set up their teepee at the Indian encampment during the Omak Stampede in August.

He often brings D.C. dignitaries with him, allowing him to show national decision-makers the people and landscape of the Colville reservation: the mountains, forests, farmlands, lakes, and rivers, and even the nation’s largest hydroelectric dam—the Grand Coulee—at once one of the most successful public works projects in U.S. history and one of the most damaging to the Indians’ salmon fishery.

Gunn’s reservation has a mix of landmarks: historical, cultural, personal, and—for someone who has spent a third of his life studying Indian law—legal. At one end of town Gunn points out the Stogie Shop. It’s a small building along Omak Avenue, but a significant landmark from a recent lawsuit over the 2009 tobacco compact between the state and the tribe. It didn’t come out in the owner’s favor, he says. The decision proved the tribe had a right to tax tobacco sales on the reservation. As we drive on, we pass the plywood plant, which was shut down in 2009 because of the drop in the housing market and plywood prices, putting 230 people out of work.

Out of town and into the countryside, we pass farms and pastures along the river, then dry steppe hillsides which later give way to wooded areas. These are sites of the reservation’s natural resources, which are to be managed by the U.S. government for the benefit of the tribes.

TODAY THERE ARE 12 tribes and more than 9,000 members on the reservation. Their ancestral lands ranged throughout the Inland Northwest covering the Columbia Plateau from the crest of the Cascade Mountains to the west where the Wenatchi, Entiat/Chelan, and Methow lived, down to the Palouse—into Idaho and Oregon with the Palus, Snake, and Nez Perce. The Arrow Lakes territory stretched up into Canada.

While they shared common languages and subsistence patterns, the tribes maintained their own unique customs and social practices, notes Jerry Scott ‘92 in his master’s thesis for the WSU history program. There were no permanent villages, but the Indians moved throughout the seasons through a definable home range. Large winter villages along rivers and waterways accommodated up to 300 people. In the spring the residents would disperse into the steppe to harvest camas, wild carrots, and other root crops. In late spring, they returned to traditional fishing areas along the rivers to catch migrating salmon.

Kettle Falls was one of the most important Indian fishing sites along the Columbia River. More than 100 million pounds of salmon could be pulled from the river each year. It was like a small city, with around 1,000 Indian fishers using the location in a season.

Jesuit missionary Pierre-Jean DeSmet described “a fine and abundant fishery” where fish going up the falls would jump into an enormous basket attached to projecting rock. Every seven to eight hours the basket would be emptied, with around 250 fish inside. “The Indians, meanwhile, were seen on every projecting rock, piercing the fish with the greatest dexterity,” he wrote.

What fish they didn’t need, the Indians would trade with tribes further east for other items. Overall, they were thriving with the available

food and natural resources, needing nothing from the fur traders and the white missionaries.

In 1825 the Hudson’s Bay Company established Fort Colville, a fur trading post, near the fishery. The company’s presence and influence altered the way of life of the Indians, according to Scott. By the 1850s settlers were sifting into the region and territorial Governor Isaac Stevens worked to negotiate treaties with the tribes, creating reservations in certain areas of the ancestral homelands and ceding other lands east of the Cascades to white settlement. While negotiations were underway in Walla Walla, gold was discovered near Fort Colville. The news sent miners rushing over tribal land and frustrated the tribes, many of whom felt treaties were being forced upon them.

The absence of a treaty made it difficult for the white authorities to control the encroachment of whites on tribal lands, notes Scott. Still, few whites settled on the plateau and many of the prospectors moved on. “While Indian/white relations on the Columbia Plateau were relatively tranquil, affairs within the Indian Office were not,” writes Scott. The federal and local officials charged with negotiating peace treaties with the tribes often struggled with issues of mismanagement, corruption, and confusion.

The confusion was compounded in 1872 when President Ulysses S. Grant issued an executive order creating a reservation for the Columbia Plateau Indian tribes in the Colville area not yet under a treaty. The boundaries of what amounted to a three million acre reservation included the Columbia River to the west, the Spokane to the south, the Little Spokane to the east and the 49th parallel to the north. It contained suitable farmland, timber land, and tribal fishing grounds. But a few months later the plan was altered to accommodate white settlers who wanted land in the area of Spokane and west. Later, even more large portions of the reservation were taken away from the reservation and opened to white settlement, ultimately leaving 1.4 million acres to several different tribes of Indians. This was the subject of the 1951 lawsuit to which Peter Gunn joined his name.

Two of the most famous Indian leaders in the history of the West ended up on the Colville Reservation. Chief Moses of the Columbia, active and outspoken for the rights of his people, was ultimately pushed to cede his peoples’ territory in the Columbia Basin and move here.

A similarly complicated relocation took place with Chief Joseph of the Nez Perce, who in the 1870s refused to move his people from their ancestral lands in Eastern Oregon to a small reservation in Idaho. Joseph and his followers became entangled in a war with U.S. soldiers. Though greatly outnumbered, they were recognized for their skill and strategy. Ultimately, they surrendered in 1877, having lost many friends and family members. Chief Joseph, who declared “I will fight no more forever,” and his band were moved to Kansas, then to Oklahoma where many succumbed to disease. They were finally allowed to come back to the Northwest, but to the Colville Reservation many miles north of their home.

Nespelem, the tribal headquarters, is at the heart of the reservation. The northwest end of town holds Chief Joseph’s grave, a tall marble

Cultures, and asked for help preparing for a career in Indian law. “It is its own peculiar field,” says Willard, who helped Gunn set up several study projects including a review of the original treaties and federal policies.

That this was Gunn’s interest came as no surprise to Willard, who was well aware of the Gunn family history. “You have three generations who have been right out in front in dealing with legal problems for Indians,” he says. “Brian is carrying on in a very positive way.”

The summer between his junior and senior years Gunn landed an internship in the Indian Records Division at the National Archives. Besides providing him a taste for working in Washington, D.C., the experience allowed him to trace his own tribal history, which included documents and photographs, in his spare hours. It suited the student Willard describes as “intellectually curious,” and “mentally energetic.”

AFTER GRADUATING, Gunn took a job at the tribal headquarters. Working directly with the council members, he saw how decisions that may seem inconsequential are often very important in a small community like a reservation—even things down to plowing driveways and maintaining septic systems. He saw the council people at work and “how really accountable they are to their constituents.”

All the while, there was this awareness that the federal government wasn’t properly managing the tribes’ trust land and resources. While the land belongs to the tribes, the federal government serves as the trustee, managing the resources on behalf of the Indians who live there, says Gunn.

The laws date back to the 1880s, when Congress authorized the Secretary of the Interior to collect income from the tribal trust property.

That income would be deposited in the U.S. Treasury and other institutions, collect interest, and be managed for the benefit of the tribes. As trustee, the government is obligated to maintain adequate records and controls to guard against errors or dishonesty. Yet the government has never provided an audit or accounting for the Colville trust. The tribe has been kept “uninformed as to the status of trust funds/property under Defendants’ control and management, what income the trust property has produced, and what disposition has been made of the income,” according to the suit which Gunn filed on behalf of the Confederated Tribes in 2005.

Eighty percent of the Colville reservation is held in federal trust. Timber seemed to be sold at below-market value. Rents for farm and range lands may not have been collected. When he was working for the tribe in Nespelem, Gunn observed the chair of the Colville tribes’ natural resources committee formally complain to the Bureau of Indian Affairs. “Nothing came of his complaint,” he says. “I distinctly remember that.”

For decades the property had been mismanaged. Resources were sold off. Grazing rights may have been granted below cost. At the same time, the government never provided an accounting of the income earned or rents collected. “Everybody kind of knew it was happening,” says Gunn.

It would be nice to offer specifics, but the records themselves are hard to find, or might not even exist. That’s the core of the problem, he says.

Intrigued by the complicated field of Indian law, he enrolled in law school at the University of Washington, and landed a summer job with a prestigious firm, which led to full-time employment after finishing his degree. He didn’t even have time to attend graduation before moving to Washington, D.C. This winter as head of the Indian Tribal Governments



STAFF ILLUSTRATION

marker in a dry and quiet hillside cemetery. Gunn sought it out on his own as a high school student. The history of this place is important to him.

As we drive up to the headquarters, Gunn looks across the parking lot. “I think that’s Alex Sam,” he says, explaining that Sam is a relative of Jim James, of the San Poil Indians, one of the last traditional chiefs on the Colville Reservation.

Gunn didn’t rush over to the older man, who was gingerly moving down the sidewalk. In fact, he slowed his approach, finally coming close enough to call out “Alex” before he bent his frame toward the open car door. Sam turned as Gunn stepped up to introduce himself. “You knew my grandfather Peter Gunn,” he said. “Oh yes,” that sparked a discussion of Sam’s uncle James and the chiefs from the different tribes.

James, and likely most of the residents of the reservation, was not forewarned about the Grand Coulee Dam project, which broke ground in the 1930s. He ran into surveyors on Indian land pounding stakes into the ground. They told him they were going to build a dam, but didn’t go into detail.

The project inundated 21,000 acres, homes were moved, towns were lost, and the historic fishery at Kettle Falls was lost. Burial grounds at 50 different locations had to be unearthed and relocated, a job which Peter Gunn supervised.

Sam had memories of Peter Gunn, especially as a friend of Chief Jim James and as a founding member of the Colville Business Council. More of Peter Gunn’s story rests in newspaper clippings including several in WSU’s archives. One of the first, dated 1933, describes a meeting where Indians complained of being discriminated against for jobs in reforestation camps on the reservation. Peter Gunn presided. Others detail the formation of the business council when the leadership decisions transferred

from the hereditary chiefs to elected members of the council, a major step toward unifying the tribes.

There are also traces of Gunn’s grandfather in rare films shot during the construction of Grand Coulee Dam. As the lead Indian representative in the effort to relocate Indian graves, Peter Gunn appears in footage dressed in a red cardigan right in the middle of the action, assisting with the hand-digging and overseeing the workers.

BRIAN GUNN GREW UP with his parents and sister Jennifer in a ranch-style house on a 10-acre parcel a few miles outside Omak. He loved roaming the hillside behind his home. “He was adventurous,” says Jennifer, who now lives near their old home. “He collected snakes. He loved to lift things up and look underneath.”

The Gunns are a large family and Brian Gunn has a wealth of uncles, aunts, and cousins who live and work either at or near the reservation. He attended high school in Omak, graduating with 88 other classmates. He chose WSU for college where he found his way into the Comparative American Culture program as well as the offices of the *Daily Evergreen*.

His dream was to become a filmmaker. But once on campus, his perspective changed. Through the *Evergreen* he landed an interview with William Kuntsler, the civil rights lawyer who had defended the Chicago Seven and members of the American Indian Movement involved in the Wounded Knee incident.

Gunn was enthralled. He talked with Kuntsler for more than an hour about topics including Malcolm X, the FBI, and Watergate, and came away realizing that he, too, would be a lawyer. He turned to Professor William Willard, who was teaching both anthropology and Comparative American



The 1941 photograph features the early members of the Colville Business Council and some of the hereditary chiefs. Peter Gunn is in the first row, second from the right. Chief Jim James is in the center of the second row with a bandana around his neck and braids. **Below:** Chief Joseph of the Nez Perce’s grave in Nespelem.



{ Forests and the future }

The Colville Tribes have two major business arms. One oversees gambling, construction, retail, and recreation, and the other oversees forest products. The reservation has 800,000 forested acres, and until recently, timber has been a key portion of the Tribes' economy.

The forests are now managed and harvested in a way to maintain the resource and protect against disease and wildfire. And for years, the reservation's two mills have provided jobs and money to the people who live there. The mill in Omak is a plywood and veneer plant and the one a few miles outside of town processes ponderosa pine and Douglas fir. Most recently, the pine and fir plant's major customers used the wood to build windows for new housing construction.

Prior to the downturn in the housing market, the two mills and the logging companies on the reservation employed about 400 men and women. In late 2009, 360 workers were laid off and both plants were mothballed. The mill closures also affected a number of truck drivers and foresters, not to mention the community's greater economy.

One morning last summer, a few trucks were moving wood chips at the Colville Indian Precision Pine mill a few miles outside of Omak. "There are just a handful of guys here," says Bob Anderson '78, one of the skeleton crew. "But at least something's going on. When the plant is quiet, it is the eeriest thing in the world."

Though the lights are out and the massive planers and bundling machines are still, everything is in running shape, ready to return to work if the market changes. The tribal business council is also working on new uses for the old plant sites. One is to convert the in-town plywood facility acreage into an industrial park, and another to build a woody biomass power generation plant next to it. The latter, a project already underway, is one step toward the Tribes having sovereignty over energy-related matters.

Above: A pickaroon waits to be used at the idled Colville Indian Precision Pine mill while Brian Gunn and Bob Anderson '78 talk in the background.

Opposite: Brian Gunn visits Saint Mary's mission church on the Colville reservation. The mission was founded near Omak in 1886.

team at Drinker Biddle & Reath, he added to his load of federal Indian law and policy work with a focus on wrapping up the Indian trust suits.

Besides the Colville case, Gunn had filed two more suits on behalf of other reservations. Similar cases, a total of 41, followed for other tribes around the West. Congress had been well aware of the trust mismanagement for decades. A 1992 House Committee on Government Operations report stated: "The (Bureau of Indian Affairs) has failed to accurately account for trust fund moneys ... the Indian trust fund is equivalent to a bank that doesn't know how much money it has."

This spring, the Justice Department agreed to pay more than \$1 billion to settle cases with all 41 tribes. The Interior and Treasury Departments had, according to the *New York Times*, "failed to adequately oversee concessions on Indian lands from companies that exploit a wide variety of resources, including minerals, timber, oil and gas." Gunn spent much of January and February negotiating the terms with his federal counterparts.

LAST SPRING the Colville's Business Council Chairman Michael Finley and several other council members traveled to Washington, D.C., to hash out the details of the government settlement. With Gunn guiding them through the process, the group worked out of conference rooms at the Department of Justice. "It was just us and a roomful of government lawyers," says Finley, who is currently vice-chairman for the council. "But we had a good negotiating team."

Most tribes weren't as involved, says Gunn. But the Colvilles sent a select group who could work directly with Gunn and his government counterparts. Though the historic \$193 million settlement satisfied their monetary demands, "It was about more than money," says Finley. "People felt that their concerns over the years were vindicated."

After years developing the suit, and days negotiating, in the end they finished their work and stood and shook hands. The moment wasn't lost on any of them, says Finley. "It started to sink in. What this all meant."

Claims dating back more than a century had been resolved. "These settlements fairly and honorably resolve historical grievances over the accounting and management of tribal trust funds, trust lands and other nonmonetary trust resources that, for far too long, have been a source of conflict between Indian tribes and the United States," Attorney General Eric H. Holder Jr. said in a statement.

Twenty percent of the Colville settlement will go directly to the more than 9,000 enrolled members. As for the rest, the council is working on plans, focusing on ways to improve resources on the reservation, create jobs, and provide for the members, says Finley.

While the tribes have historically counted on the timber industry and the lumber mills for employment, "We're an extremely diverse economy," says Finley. He points out the casinos, stores, farms, "and a lot of untapped resources. We want to diversify."

The Colville Tribes are already working on an alternative energy program converting the out-of-use lumber mill to using woody biomass to generate power. They are returning the forests to their historic state with ponderosa pine instead of the newcomer Douglas fir. Also, the tribes

have set aside moneys from timber sales to buy back portions of their historical reservation that have been sold into non-Indian ownership.

AS WE DRIVE DOWN a rugged little road by Rufus Woods Lake, the lake created by Chief Joseph Dam, Gunn points out a beach that he visited in high school. "When I'm here for work, I don't have time to see my own favorite spots," he says. He does get homesick for Washington. "But I think I am more benefit to the tribes doing this kind of thing that I'm doing now."

Last spring, shortly after the settlement was made public, Gunn returned to the reservation with a "traveling PowerPoint," to explain the settlement he had spent years concluding. He stopped in his grandfather's hometown of Keller where the locals recognized him as an advocate for the community. "Some of the older folks came up to me," he says. "They said, 'We thought you would be one of Pete Gunn's grandsons.'" ❌

View more feature story photos at wsm.wsu.edu/gallery.





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1950s

David ('52 Geog.) and **Marian** ('51 Comm.) Nordquist of Pullman celebrated their 60th wedding anniversary. David was a WSU Cougar football player and ASB President and Marian was in a sorority.

1970s

Gary Kipp ('70 English), director of the Association of Washington School Principals, has been named 2012 Advocate for Education by the Washington State University College of Education.

Paul J. Fletcher ('72 Civ. Eng.), a retired major general in the Air Force, received the 2012 Washington State University Alumni Association Alumni Achievement Award. Fletcher's numerous military honors include the Distinguished Service Medal, Legion of Merit, Defense Meritorious Service Medal, Meritorious Service Medal, and the Humanitarian Service Medal.

John Gifford ('74 Comm., Ad.) is the president of the Pacific Northwest Ski Areas Association Board of Directors. He was formerly the general manager of the Stevens Pass ski area.

Ann McGuigan ('77 MA, '93 PhD Ed. Psych.) is the assistant vice president of Texas A&M University's Division of Research Office of Research Development. She is also the president of the National Organization of Research Development Professionals.

Eric Tessem ('77 Const. Mgmt.), senior vice president and general manager of dck pacific construction, LLC, has joined the board of directors for Enterprise Honolulu, the O'ahu Economic Development Board. His appointment is for three years.

Edmund O. Schweitzer III ('77 PhD Eng. Science) was honored with the 2012 IEEE Medal in Power Engineering. Schweitzer was recognized for his leadership in the field of electrical power systems. IEEE is the world's largest technical professional association.

Tom Larsens ('79 Ed.) is head coach of the Bellarmine Prep Lion Pride football team in Tacoma. The team is ranked #2 in Washington state 4A football.

1980s

Karen (Blair) Troianello ('80 Comm.) wrote about Title IX in the *Seattle Times* earlier this year. Title IX celebrated its fortieth anniversary this year, and as a student Troianello joined WSU alumni, faculty and coaches to fight for gender equality in athletics.

Mariano Morales Jr. ('81 Forest & Range Mgmt.) was voted "Best Attorney" in the Yakima Valley for the sixth time in nine years by readers of the *Yakima Valley Business Times*.

» tracking



Bob Hanson '82

When bowling was big

by *Somer Breeze-Hanson '06* :: Bob Hanson was just 18 when he bowled his first 300 game.

He remembers that day in 1977 when he threw 12 consecutive strikes on lanes 9 and 10 at Tower Lanes in Tacoma. At the time he was the third bowler to ever record a 300 game in the history of the Tacoma Junior League. The achievement, which made the front page of the *Tacoma News Tribune*, was just one of many milestones in Hanson's 47-year career. But nothing has topped being part of the WSU men's 1982 national championship bowling team, he says. "When you win something with the team, it is an unbelievable feeling."

Hanson picked up his first bowling ball at Tower Lanes when he was six. When he turned 15 he got a job at the bowling center and worked there until starting college at the University of Washington. The school wasn't for him, though. He dropped out and tried construction until he broke his left arm in 16 places.

Unable to work for nearly a year, he still couldn't stay away from the bowling lanes. While visiting a friend at WSU he saw the men's bowling team practicing at the Compton Union Building. The 19-year-old, who had recovered, jumped in on the practice. The teammates were impressed and urged him to enroll at WSU and join them. "They said, 'We have a pretty good bowling team and you can have all the free bowling you want,'" he says.

"I was driving home thinking, 'All the free bowling I want? Really?'" He joined a team of close-knit bowlers not well known in the collegiate bowling scene, but on the rise. The Cougars finished runners-up at the nationals in 1980

The 1982 National Champion WSU bowling team. Bob Hanson '82 is seated fourth from left. Besides Hanson, Gary Rauth, Dan Lovejoy, Jim Kent, and Jim Campbell bowled to beat Michigan State 192-168.

during Hanson's first season. The following year WSU didn't advance out of sectionals, but Hanson placed second in the Western Division as an individual. In 1982 the Cougars advanced to nationals for the second time in three years. After a rough set on the first day of the tournament, they hovered near last out of 12. But the following day they rallied, setting two national records to vault them to the top where they defeated Michigan State for the title.

Over his career, Hanson has won bigger tournaments, "but when you win singles, everyone else lost," he says. Winning with a team makes the success even sweeter. "When you bowl on national television and you win a national championship there is nothing better than winning a big tournament with teammates." Hanson's collegiate

» tracking

career ended with the national title. He graduated in 1982 majoring in business and in 1984 married Carrie Meske, a member of the WSU women's bowling team. Two other of his teammates also married bowlers from the women's team.

After graduation, Hanson started work for AMF Bowling and at 23 was managing a bowling center in Tacoma. Then he went into real estate for 18 years while continuing his competitive bowling career. Wanting to get back in the bowling business, Hanson bought some bowling alley shops and became manager of Tower Lanes. About four years ago when the business was up for sale, Hanson and some partners bought the bowling center. Today in his Tower Lanes office he displays a WSU bowling ball and his 1982 National Championship shoe bags. Hanson has repeated that 300-game landmark 33 times. He bowled his 34th 300 game at the United States Bowling Congress Open Championships in Baton Rouge last spring. It had been his goal to reach the 300 feat at the tournament for 22 years. He came close, finishing with a 289 last



Bob Hanson rolled a 300 game at the Nationals in 2012. Courtesy Bob Hanson

year—missing on the 11th frame. This year, “When I got the 11th (strike) everyone stopped bowling and started to come over to watch,” Hanson says. “I was nervous because I wanted that so bad because I’m getting older and those opportunities don’t just jump at you all the time. When I let go of the 12th ball it came off so clean.” Though Hanson has reached yet another one of his bowling career goals, there are no signs

of the 53-year-old slowing down. He has never taken a year off from the sport and doesn’t plan to anytime soon. Now his sights are set on earning a spot on the Professional Bowling Association’s senior tour.

 More about the 1982 WSU bowling team and on campus bowling is at wsm.wsu.edu/extra/bowling.

What I’ve Learned Since College

An interview with Ruth Bindler ’01

by Hannelore Sudermann :: Ruth Bindler ’01 PhD grew up in the Adirondacks of New York. In the 1960s, when she started college at Cornell, the typical paths for women were teaching and nursing. Since she enjoyed her science classes, nursing seemed a logical route. Turned out it was a great fit. After working for a time at Memorial Sloan Kettering Cancer Center in New York, she moved to Wisconsin with Julian Bindler, who later became her husband, and found both nursing work and graduate school.

Bindler not only went on to become a successful public health nurse, she authored several books on children’s health and medication, was a key member of several children’s health studies in the Pacific Northwest, and has had a full career at what was the Intercollegiate Center for Nursing Education (ICNE) and today is the WSU College of Nursing, where she most recently served as associate dean of graduate programs. Through teaching, nursing, writing, and taking part in studies, she has served as a force for improving children’s health.

In the interim she completed a doctorate in nutrition at WSU, raised children Dana ’05 and Ross ’09, and found time to enjoy Washington’s great outdoors. Just prior to retiring from her job at WSU this fall, she visited with Hannelore Sudermann to talk about the things she’s learned since college.

FIND YOUR FIT: In Madison (while in graduate school) I became a public health nurse. About half our time was spent visiting people in their homes for things like follow up after surgery, or if they just had a baby, and half was in the schools. At the time, they didn’t hire their school nurses... I worked with new moms and parents with kids who were anemic and had to work with their diet. I just started loving pediatrics.

Kim Roberts (’82 Arch.), co-owner of Westport Winery, is ambassador to Washington state’s Artist Trust as a representative of Washington’s coastal region. In addition to helping the organization that provides financial support and recognition to artists, her winery and vineyards are home to an outdoor sculpture garden featuring the works of local artists.

Lori Stinson (’83 Nursing) was named “Outstanding Nurse Leader of 2012” by Nurse Leaders of Idaho. She is the Lewis-Clark State College Nursing and Health Sciences chair and a professor.

James L. Blanchard (’84 PhD Vet. Sci.) is the acting director of the New Iberia Research Center at the University of Louisiana at Lafayette. He has 28 years of experience in primate medicine and surgery experience.

Scott Peterson (’85 Bio.) is the chief scientific officer of Oncothyreon Inc., a biotechnology company specializing in cancer treatments. Peterson was director of oncology research at ZymoGenetics Inc. before joining Oncothyreon.

Alan Basso (’86 Lib. Arts) is a Port of Kalama commissioner. He is also a lieutenant and fire investigator with the Longview Fire Department and is a part time juvenile detention officer with the Cowlitz County Juvenile Detention Center.

Ethan A. Bergman (’86 PhD Pharm., Nutrition) is president of the Academy of Nutrition and Dietetics. He also serves as an associate dean in the College of Education and Professional Studies and professor of food science and nutrition at Central Washington University.

Lisa Skari (’87, ’11 EdD) received the annual H.S. Warwick Research Award in Alumni Relations for Educational Advancement from the Council for Advancement and Support of Education for her WSU doctoral dissertation “Who Gives? Characteristics of Community College Alumni Donors.”

1990s

Mark P. Jones (’90 Comm.) is the Northwest business development director for ERDMAN, a health care facility planning, design, and construction firm.

Don Kowalchuk (’90 Const. Mgmt.) is the vice president of operations at Skanska USA, one of the largest construction and development companies in the nation.

Megan Riebe (’90 Bus. Admin.) is the associate vice president of development and executive director of the University of Alaska Foundation. She has more than 16 years of experience in fundraising, and worked for the Washington State University Foundation.

Linda Maule (’91, ’93, ’97 PhD Political Sci.), of Indiana State University, is the first dean of the new University College, which will focus on the needs of first-year students. She has been coordinator of ISU’s Foundational Studies Program as well as a faculty member in political science and women’s studies.

Matthew Woolsey (’92 Comm.) completed his EdD in higher education and organizational change at Benedictine University in Lisle, Illinois. He is a professor at that university.

Ken Lee (’93 Civ. Eng.) was appointed to the Bel Aire, Kansas, city council. Lee served on the city’s Economic Advisory Committee prior to the appointment and is an associate with Ruggles & Bohm P.A., a civil engineering and land planning company.

Steven J. Buri (’94 Poli. Sci.) was recently named the president of Discovery Institute, a Seattle-based think tank.

Faisal Awawdeh (’97 PhD Animal Sci.) is the new regional coordinator of the International Center for Agriculture in the Dry Lands, Arabian Peninsula Regional Program.

Joshua Huff (’97 Bus. Admin.) is a revenue agent for the Internal Revenue Service in Eugene, Oregon. He was one of 125 hired out of a pool of 4,000 applicants.

Janie McCauley (’98 Comm.) is an AP sports reporter who helped cover the 2012 Summer Olympics in London. Her reporting included volleyball, women’s soccer, diving, and gymnastics. This was Janie’s fourth Olympics.

2000s

Justin Guillory (’00 MED, ’08 PhD) is a new resident of Northwest Indian College (NWIC) in Bellingham.

Jason Hunt (’00 Marketing) was recently hired as national sales manager at American Alliance of Creditor Attorneys (AACA), the first network of litigation attorneys in the United States.

Amber Busch (’01 Bus. Admin., Acctg.) is one of *Puget Sound Business Journal’s* “Top 40 Under 40” for 2012. She works in the tax department at Clothier & Head, an accounting firm in Seattle.

Raphael Moffett (’02 Engl., TC Ed.) was named vice president for student affairs at Langston University in Oklahoma. Moffett earned a doctorate in educational leadership from Clark Atlanta University and previously served as director of campus and community involvement, advisor for African-American Student Affairs, and director of student life.

Jake Spratt (’05 Econ.) joined the real estate group of Brownstein Hyatt Farber Schreck, a law firm with more than 260 attorneys in the western United States and Washington D.C.

Sitha Ngy (’06 Comm.) was hired as senior art director for the Seattle ad agency Copacino+Fujikado.

Matt Loveless (’07 Comm.) anchors a nightly sports section for WAND 17 TV, a local news station serving Champaign, Springfield, and Decatur, Illinois. He has also worked as a sports anchor in Washington and Idaho.

Justin Lange (’08 Comm.) was hired as director of multimedia production and broadcast services at George Washington University Department of Athletics and Recreation.

Christian Wuthrich (’08 PhD Higher Ed. Admin.) is the dean of students at Boise State University. He previously served as dean of students at WSU.

Aron Baynes (’09 Mvmt. Studies) played center on the Australian Olympic basketball team at the 2012 London games. Baynes played for WSU from 2005 to 2009.

Franklyn Graham (’09 Psych.) finished his master of science at Loyola University Maryland. He begins the doctorate program at Brandeis University in August.

Navy Seaman Samuel C. Tennant (’09 Biology) recently completed the U.S. Navy basic training at Recruit Training Command, Great Lakes, Illinois.

Jeff Webster (’09 Bus. Admin.) became a corporate sales executive at the Daytona International Speedway in June 2012.

PARENTS ALWAYS HAVE QUESTIONS: As a teaching assistant for a large child development class at the University of Wisconsin-Madison I did a research project that worked as a group discussion for parents. There just was such a need. So I created a group discussion.

BE THE ONE THEY NEED: When we came here, you could just call places or go to the library and look up what was there. I wrote to the Intercollegiate Center for Nursing Education. That year the hospitals in Spokane decided they couldn’t take all the nursing students. And the faculty (at the center for nursing education) were acute care people. They didn’t want to do this community health thing. That’s why they wanted me. They needed somebody immediately.

I got very engaged very quickly in the community. I had to find all these outpatient services that could take one or two or three students. There were a lot of resources—places for pregnant adolescents who couldn’t live at home, clinics, daycare centers, places that really needed a focus on health.

DECIDE TO STAY: We were going to stay here (in Spokane, where Julian had a two-year obligation at Fairchild Air Force Base) for two years. We ended up staying for good. We were up cross-country skiing one winter’s day. The sky was blue, the trees covered with snow. We looked at each other and said why would we leave here?

YOU CAN’T NOT BE AFFECTED BY HAVING CHILDREN: I just loved being a mom. They never expected me to give up work and stay at home. Everybody was always very accepting in my family that I would work and my kids would go to daycare after school. But we were always there for things like cheerleading and hockey.

LET THE BUG BITE YOU: I’ve always had this research bug in the back of my mind. In the late ’80s and early ’90s we saw a lot of kids were overweight. It hadn’t been identified as a national problem, but we could see it. The first thing we did was review a Bloomsday study that had collected data from kids and adults. [The 1991 survey conducted in connection with the well-known race was about cardiac risk factors in children, and it included family history of heart disease, smoking, blood pressure, diet, exercise and fitness levels, and stress. It was the first of a number of studies in which Bindler and her

colleagues explored childhood obesity, habits, and health.]

WRITE ABOUT IT: I taught with a woman named Linda Berner Howry. We got annoyed that there was never good information about pediatrics and drugs. So we wrote a proposal for a pediatric medications textbook. Then we did a parents’ guide for pediatric drugs, then a pediatric nursing book.



Ruth Bindler ’01. Photo Allison Benjamin

I’m not sure that in nursing education at that point writing textbooks was really valued. But you reach a lot more students by writing textbooks. Our books are now printed in other languages. People all over the world are influenced by the practice and theory of practice that we’ve written about. [Her book *Child Health Nursing: Partnering with Children and Families* was named a 2010 Book of the Year by the *American Journal of Nursing*.]

CHILDHOOD OBESITY IS A SERIOUS PROBLEM: We started seeing that in the late ’80s. At that point in time most health care

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professionals were saying we can't call kids obese. My observation was that they know if they're overweight. Now you've got to tell the parents that they're overweight and that they should do something about it. Now one out of four boys and one out of three girls born today will develop diabetes in their lifetimes. That is astounding. It used to be just one or two kids in a class. Now it can be half of a classroom that is overweight and can't really function in PE. It's a really different world.

KEEP PUSHING FOR CHANGE: We paid the schools to get the vending machines out of the schools, and we're teaching the cooks to cook from natural foods rather than just getting tater tots. And the community gardens I think are really just amazing.

It is possible to do what you dreamed of when you were young: I really always liked to write. When I was young, I thought I'd be a journalist and I thought I'd want to teach. Now, I have authored a number of pediatric textbooks. I became a writer, I also became a teacher. It feels like I've come full circle.

Chris Dunagan '74, '75

Bearing witness to the sights and smells of our soggy backyard

by Eric Sorensen :: If you cover the waterfront the way Chris Dunagan does, you have to expect a fair amount of smells. There's the fresh, tangy scent of estuary and the mild musk of beach wrack. There's the stench of rotting shellfish during the great Oyster Rescue of 2010, and the outsized rot of a beached gray whale. Dunagan, 60, has documented a lot of beached whales, although the numbers are hard to nail down.

Counting just grays, not killer whales or humpbacks or dead whale reports over the phone, he says, "I've probably gone out to 20."

Dunagan (biochemistry '74, '75 communications) has been the environmental reporter for the *Kitsap Sun* for 26 years. In a world of shrinking newsrooms and thinly stretched reporting staffs, he soldiers on as an

2010s

Miyuki Vamadevan Arimoto ('10 PhD Soc.) was named assistant professor of criminology and criminal justice at Buena Vista University in Storm Lake, Iowa.

David Phaxayseng ('11 Soc.) recently completed U.S. Navy's eight-week basic training at Recruit Training Command, Great Lakes, Illinois.

IN MEMORIAM

1930s

Anna McGlade ('30 Home Ec., Alpha Gamma Delta), 102, June 29, 2012, Spokane.

Alice Norum Peterson ('32 Ed., Kappa Kappa Gamma), 101, July 29, 2012, Keyport.

Louise Daly Grams (x'34), 95, June 14, 2012, San Mateo, California.

Genevieve Hamilton Amundson (x'35-'37, Kappa Kappa Gamma), 95, August 27, 2012, Seattle.

Patrick F. Hargreaves ('36 Elec. Engr.), 98, August 6, 2012, Bellevue.

Helen S. Robinson (x'36), 100, June 2012, Everett.

Ernest Logan "Ernie" Bishop ('38 Home Ec.), 95, December 16, 2011, Springfield, Oregon.

Oscar C. Calkins (x'39, Theta Chi), 92, August 10, 2012, Spokane.

Wayne Whitbeck (x'39), 90, March 3, 2012, Portland, Oregon.

1940s

James G. Hendrickson ('40 Elec. Eng.), 93, August 1, 2012, University Place.

Norma Josephine Anderson ('41 Music, Alpha Gamma Delta), 91, August 13, 2012, Spokane.

William E. Hummel (x'41), 89, July 16, 2012, Everett.

J. Haworth "Howie" Jonte ('42 MS Chem., Alpha Chi Sigma), 93, July 27, 2012, Weatherford, Texas.

Eugene Wallace Strauss (x'42), 90, August 16, 2012, Edwall.

Frieda L. Wallace (x'42), 88, August 9, 2012, Everett.

Robert Eugene Watson ('42 Mech. Engr.), 92, July 29, 2012, Prairie Village, Kansas.

Duncan T. Breithaupt ('43 Animal Sci.), 95, July 30, 2012, Dayton.

Orie L. Lothspeich ('43 Liberal Arts), 90, June 20, 2012, Vancouver.

Walter R. Ullrich ('43 Animal Sci.), 91, January 28, 2012, Okanogan.

Bernhard O. Helling ('44 Econ.), 90, July 30, 2012, Carmichael, California.

Margaret Elsie Groth ('46 Bus. Admin.), 88, August 19, 2012, Fairfield.

Dorothy A. Lamb (x'46), 84, August 2, 2012, McMinnville, Oregon.

Clarice Mae Miller ('46 Fine Arts), 88, July 12, 2012, Battle Ground.

DeVere W. Stevenson ('46 Ag.), 92, June 24, 2012, Mesa, Arizona.

Dorothy E. Aylor (x'47), 82, June 3, 2012, Spokane.

» tracking

At the Kitsap Golf and Country Club, he navigates thickets of blackberries to reach Chico Creek. Dunagan remembers seeing spawning salmon struggle up the creek, beating themselves up as they encountered forbidding falls and concrete culverts. Various restoration efforts



Newborn orca off Kingston. Candice Emmons/Northwest Fisheries Science Center (NMFS Permit 781-1824)

old-school beat reporter, covering meetings, tapping sources, and ranging about in jeans, thick boots, and a Nissan Frontier. Through the years, he's written close to 10,000 stories. That's millions of words and nearly a story a day, including Sunday features, the occasional series, and, more recently, posts to the Watching Our Water Ways blog.

Few areas lend themselves to such a beat as well as Kitsap County and the upper reaches of the Olympic Peninsula. It's beautiful, with thick salmon runs, bald eagles, wandering orcas, and hundreds of miles of Puget Sound shoreline, from the bustling docks of Bremerton to the backwaters of Hood Canal. It also has population pressures and pollution, from the anoxic dead zone in Hood Canal to a legacy of toxics in various aging Navy sites.

"It's hard to find a better place to cover the environment than here," says Dunagan as he steers his Frontier along the wooded two-lane roads between Bremerton and Belfair. Most every turn has one of his thousands of stories and signs of the slowly evolving changes one only notices through years of observing and documenting.

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» tracking

have since widened the stream and evened out the streambed with rocks and logs.

"This is the most productive chum salmon stream in the county," he says.

In 1997, the stream's prolific run drew 19 orcas into Dye's Inlet for the first time in 40 years. They arrived in the third week of October, a fact Dunagan remembers because, he says, "I've written about it so many times."

Over the next four weeks, the orcas drew thousands of onlookers to the shore and as many as 500 boats. Researchers noticed they seemed afraid of the Warren Avenue bridge, which they had to pass under to get out of the inlet. The orcas stayed 30 days and appeared to be losing weight when at last they made their way out with the help of researchers encouraging them by slapping the water.

"It was my entry into killer whales," says Dunagan, who spent the month explaining orca matriline, dialects, and social structure. He's still doing it. Just this morning, he wrote about the birth of J-49, the latest member of Puget Sound's resident orcas.

Driving toward Hood Canal, Dunagan explains how he set out to be a scientist, studying

biochemistry at WSU and even getting a degree in it. But he saw the field taking him down an ever-narrower course of study, while he preferred "science in general."

He stayed at WSU another year to get a bachelor's in journalism. With the help of Professor Charles O. Cole, he landed a job at the *Idaho Falls Post-Register*. His beat included Yellowstone and Grand Teton national parks and a swath of national forests.

He went to the *Sun* in 1977, covering government for five years and working on a three-person investigative team before being named the paper's first environmental reporter.

More than a quarter century later, he says, "I'm the only one that they've ever had."

At the aptly named Scenic Beach, he takes in the expanse of Hood Canal, the doglegged fjord reaching around the western backside of Puget Sound. It is wide, wooded, and wild looking, but in 2010 Dunagan got reports from local residents that the *USS Port Royal*, a 567-foot guided-missile cruiser, had been making high-speed turns, producing a series of waves that pushed oysters well above the

Robert R. Curtis ('47 Speech Comm.), 87, July 26, 2012, Colfax.

Robert L. Turner ('47 Civil Engr.), 90, June 26, 2012, Placentia, California.

Beverly Jean White (x'47, Alpha Gamma Delta), 82, August 15, 2012, Everett.

Wandalee Cole ('48 Sociology), 87, August 21, 2012, Lake Oswego, Oregon.

Harold R. Frank ('48 Elec. Engr.), 88, August 13, 2012, Santa Barbara, California.

James Allen Ramsey ('48 Bus. Admin.), 86, July 11, 2012, Santa Rosa, California.

Philip "Phil" Sorensen ('48, '50 MA Ed., Lambda Chi Alpha), 87, July 2012, Portola Valley, California.

V. Glenn Dallas ('49 Speech Comm.), 87, August 2, 2012, Redmond.

Donald Harold Helfer ('49 DVM), 87, May 24, 2012, Corvallis, Oregon.

Hilda Bowman Young (x'49), 87, August 2, 2012, Spokane.

1950s

Robert O. Delzell ('50 MS Psych.), 89, August 8, 2012, Burlingame, California.

George P. Hodges ('50 Ag.), 84, May 19, 2012, Spokane.

Ernest N. McCulloch ('50 Ag.), 84, July 18, 2012, Windsor, California.

Donald LeRoy Mosman ('50 Civil Engr.), 87, July 24, 2012, Lakewood.

Sylvia D. Norton (x'50), 87, June 27, 2012, Vancouver.

Daniel C. Peterson ('50 Bus. Admin.), 86, August 2012, Hillsboro, Oregon.

Richard Eugene Saty ('50 Civil Engr.), 86, July 17, 2012, Spokane.

Harvey Vernier ('50 Arch. Eng., '64 Physics), 83, June 2, 2012, Spokane.

Florence B. "Flossie" Wager ('50 Comm., '54 Ed.), 84, August 22, 2012, Vancouver.

Marilyn Ann Wilson ('50 English, Alpha Chi Omega), 84, June 28, 2012, San Jose, California.

John M. Youngquist (x'50), 71, August 11, 2012, Mount Vernon.

Shirley Marie Binder ('51 Psc., '70 MED), 82, July 26, 2012, Austin, Texas.

Alice Eleanor Bowman ('51 Elem. Ed.), 83, August 10, 2012, Bellevue.

William F. Cheatley ('51 Ed.), 87, May 27, 2012, Rancho Mirage, California.

Jeanne Dost ('51 Econ.), 82, June 12, 2012, Freeland.

W. Glenn Enstrom ('51 Elec. Engr.), 83, August 4, 2012, Everett.

Harvey Jacobs ('51 Liberal Arts), 86, May 24, 2012, Uniontown.

Doris Ingaborg Rogstad ('51 Home Ec.), 84, June 26, 2012, Seattle.

Theodore Spring Block ('52 Business, '63 MBA), 82, July 20, 2012, Williamsburg, Virginia.

Robert Lee (Bob) Fisher ('52 Pharm.), 83, August 3, 2012, Kennewick.

George A. Henson Jr. ('52 Bus. Admin.), 81, April 25, 2012, Clarkston.

Virginia S. Marble ('52 Business), 82, August 2, 2012, Pasco.

Frederick D. Paige ('52 Agro.), 81, June 22, 2012, Littleton, Colorado.

Margaret Anne Marr ('53 Liberal Arts), 80, October 28, 2011, Potlatch, Idaho.

Eleanor Lois Poulter ('53 Sociology), 81, June 2012, Costa Mesa, California.

Adelaide Dunn ('54 MA English), 90, May 27, 2012, Pinckneyville, Illinois.

Sarajane Gorgura ('54 Liberal Arts), 77, February 25, 2010, Yakima.

Charles Y. Hoyt ('54 MS Botany), 93, July 29, 2012, Phoenix, Arizona.

Donald Gunnar Johnson ('54 Zoology), 83, July 3, 2012, Shoreline.

Robert E. Monahan ('54 English), 79, July 14, 2012, Kent.

Franklin Paul Parks (x'54), 76, May 18, 2012, Fresno, California.

Leslie L. Stehr ('55 Hotel & Rest. Admin.), 78, January 11, 2012, Auburn.

Ronald P. Hoss ('56 Speech), 79, July 22, 2012, Battle Ground.

James V. "Jim" Kretz ('56 Music), 81, January 22, 2012, Campbell River, BC, Canada.

Arthur C. Thompson ('56 Chem.), 92, June 20, 2012, Marietta, Ohio.

Phyllis I. Weishaar ('56 Elementary Ed.), 77, June 7, 2012, Edmonds.

Robert Harold Lamb ('57 Polit. Science), 76, August 17, 2012, Seattle.

Ronald E. "Wick" Thomas ('57 Arch. Eng.), 78, August 30, 2012, Vancouver.

Jack Sherwood Rucker ('58 Forest & Range Mgmt.), 84, June 10, 2012, Seattle.

Stanley E. Bailey ('59 Bus. Admin.), 80, July 3, 2012, Spokane.

Ray E. Jongeward ('59 EdD Ed. Admin.), 91, October 12, 2011, Vancouver.

1960s

Larry Dale Liptac ('60 Ag.), 74, August 16, 2012, Billings, Montana.

Kirby Parker ('60 Civil Engr.), 78, April 26, 2012, Richland.

Myron Keith Wilson ('60 MA Sociology), 78, July 23, 2012, Las Vegas, Nevada.

Roland C. DeVore Jr. ('61 MS Phys. Ed.), 81, August 29, 2012, Union Springs, New York.

Gary Herbert Foisy ('61 Elect. Engr.), 73, June 21, 2012, Mesa, Arizona.

Joan Louise Hattermer ('61 Ed., Pi Beta Phi), 73, July 14, 2012, Spokane.

Judith Anne Haworth ('62 Social Studies), 72, June 15, 2012, Bellevue, Nebraska.

Gary Victor Wilgus ('62 Sciences), 73, June 25, 2012, Everett.

Russell W. Busch ('65 English), 68, April 11, 2012, Seattle.

John William Goeller ('65 Liberal Arts), 70, July 6, 2012, Spokane.

Dean L. Johnson ('65 Econ.), 68, November 30, 2011, Annapolis, Maryland.

tide line. State shellfish biologists organized a rescue party, but not before thousands of oysters died and, naturally, festered.

Dunagan, meanwhile, pressed the Navy into acknowledging the *Port Royal*'s role. Two months later, it blamed the incident on a "confluence of factors" but said it had taken steps to prevent a recurrence.

"They ended up kind of apologizing," Dunagan says.

He cuts south across the peninsula to Belfair and the eastern hook of Hood Canal's Great Bend. In 1991, Dunagan wrote the bulk of the series, "Hood Canal, Splendor at Risk," which asked, "Will people be able to rescue an ecosystem

on the brink of destruction?" It was thorough, documenting logging, fishing, wetlands, development, and more. Released later as a book, it won the Governor's Writers Award, now called the Washington State Book Award.

At the time, Dunagan had heard about low oxygen levels in the canal, "but I didn't tie it into a major problem." Then came fish kills, lower oxygen levels, a major study, and the discovery of a "dead zone" with so little oxygen, it couldn't support fish.

Dunagan took to going online to check oxygen levels at various buoys and conferring with Jan Newton, a University of Washington researcher and expert on the dead zone.

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Living Voices: The Right to Dream (1/16)

Bearfoot (2/7)

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“There was one year I called her and she said, ‘Looks like a fish kill is coming,’” he says. “The next day, dead fish were reported.”

Dunagan has since covered efforts to get state and federal funds to build a sewage treatment plant in Belfair, replacing the septic systems



Chris Dunagan at the Theler Wetlands. Staff photo

that get much of the blame for raising nitrogen levels in the dead zone. He also rides herd on the Puget Sound Partnership, the industrious public-private effort to restore the sound.

More than most anyone in the state, Dunagan has borne witness to this and smaller efforts, including the restoration of the lush, boardwalked Theler wetland in what he calls “Belfair’s soggy backyard.”

Just up from the wetland sits the Theler Community Center, where one can look up at the suspended, 27-foot skeleton of a gray whale. Dunagan wrote about the whale, a two-year-old juvenile, when it beached. Volunteers buried the carcass to let it decompose and, in theory, leave just bones.

As with so many other natural events in his vast neighborhood, Dunagan was there to bear witness.

“When they dug it up, it smelled really bad,” he says. “It didn’t clean up as well as they wanted it to.” »

Watch a salmon video produced by Chris Dunagan ‘74, ‘75 at wsm.wsu.edu/extra/Dunagan-salmon.

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WSU Impact

Informed Advocates of Washington State University

James Eugene Havens (‘66 MEX Adult Continuing Education), 78, August 28, 2011, Redmond, Oregon.

Ronald Raymond Irwin (‘66 Mech. Engr.), 71, August 1, 2012.

Walter Balinski Jr. (‘67 & ‘73 MS Mech. Engr.), 66, April 30, 2012, Mead.

Rodney Heisler (‘67 MS, ‘70 PhD Elec. Engr.), 70, March 8, 2012, Port Angeles.

Russell N. Rosenthal (‘67 MS, ‘71 PhD Hort.), 72, June 30, 2012, Lacey.

William Robert Mackey (‘68 Comm., Lambda Chi), 71, May 31, 2012, Centralia.

John Verstrate (‘68, ‘70 MS Food Sci., ‘80 PhD), June 13, 2012, Sarasota, Florida.

Peter R. Hooper (x’69), 81, April 21, 2012, Reading, England, United Kingdom.

Melvyn S. Rupp (‘69 PhD Botany), 83, April 28, 2012, Perry, Oklahoma.

1970s

Laurel Anne Knox (‘70 Ed.), 64, July 9, 2012, Othello.

Robert “Bob” Mitchell (‘70 MS Physics), 71, June 9, 2012, Klamath Falls, Oregon.

Steven M. Tuominen (‘70 Materials Sci. & Engr.), 64, Battle Ground.

I. Ann O’Connor (‘71 Home Ec.), 62, June 12, 2012, Williamston, Michigan.

Mack I. Johnson (‘73 PhD Vet. Med.), 73, June 7, 2012, Oxnard, California.

William F. McCloskey (‘73 Mech. Eng.), 63, August 4, 2012, Williamsburg, Virginia.

Stephen Ferris Albers (x’74), 60, July 27, 2012, Lakewood.

Jeannine Marie Carr (‘74 Police Sci.), 60, July 16, 2012, Bellevue.

Bonnie Jean McMillan (x’74), 56, June 18, 2012, Tacoma.

David Lloyd Pflug Jr. (‘74 MA Polit. Sci.), 65, July 3, 2012, New Canaan, Connecticut.

Delmar Gene Corrick (‘75 PhD Ed.), 79, April 12, 2012, Little Falls, Minnesota.

G. Scott Benker (‘76 Civil Engin.), 61, July 26, 2012, Visalia, California.

Eunice Marie Allen (‘77 Fine Arts), 87, July 1, 2012, Sherman Oaks, California.

Charles M. Boornazian (‘77 MS Physics), 59, May 26, 2012, Ridgecrest, California.

Aaron Karl Hixenbaugh (‘77 Finance), 60, August 9, 2012, Bonney Lake.

Lisa Ann Osburn (x’77), 52, July 19, 2012, Normandy Park.

Elizabeth M. Sickles Waddoups (‘77 MED), 87, June 7, 2012, Kennewick.

Donald D. Hillesland (‘79 Ag. Mech.), 66, June 4, 2012, Northwood, North Dakota.

Eric William Johnson (‘79 Econ.), 57, July 14, 2012, Bellevue.

Elizabeth Joan Meyer (‘79 Vet. Med. Bacteriology), 55, August 18, 2012, Hillsboro, Oregon.

1980s

Kathi Goertzen (‘80 Comm.), 54, August 13, 2012, Seattle.

Lori Jean Griffith (‘82 Bus. Admin. Marketing, Pi Beta Phi) 52, August 14, 2012, Cashmere.

William M. Wyatt (‘82 Sciences), 53, June 17, 2012, Redmond.

Jodi Lyn Pound (‘84 Food Sci., Delta Delta Delta), 52, August 19, 2012, Kirkland.

Anthony Frank Leon (‘87 Mat. Sci. & Engr.), 48, June 28, 2012, Puyallup.

1990s

William W. “Chip” Treverton Jr. (‘96 Bus. Admin., Theta Chi), 39, July 28, 2012, Seattle.

Jessica Lynn Webster (‘99 Ed.), 35, August 4, 2012, Spokane Valley.

2000s

Sarah Margaret Moore (‘02 Hort.), 54, August 27, 2012, Pullman.

Faculty & Staff

Edwina E. Barnsley, 89, August 10, 2012, Bellingham.

Harold D. Beckham, 100, June 10, 2012, Pullman.

George Boyko, 87, Prof. Emeritus College of Education (Tacoma) 1970-1996, July 14, 2012, Issaquah.

Patricia M. Fairbanks, June 6, 2012, Sacramento, California.

Anthony M. Gallina, 80, Professor Emeritus Vet Med, 1976-2007, April 1, 2012, Panama City, Florida.

James Huber, 71, Washington Animal Disease Diagnostic Lab 1970-1987, May 24, 2012, Colfax.

Marjorie L. Hunt, 90, Nuclear Radiation Center 1958-1985, March 30, 2012, Selah.

Alice M. “Midge” Kendrick, 92, Mail Svs. and Alumni Assn., June 13, 2012, Tucson, Arizona.

Sherman LeFors, 86, Facilities Operations 1972-1987, April 29, 2012, Moscow, Idaho.

Virginia Ann Marx, 67, July 26, 2012, Spokane.

Roger Nelson, 85, Civil & Environmental Engineering 1954-1988, March 27, 2012, Kent.

Carol J. Nilson, 85, Fac. Ops. 1963-1990, January 20, 2012, Hayden, Idaho.

Arthur F. Noskowiak, 91, Wood Materials & Engineering Lab 1960-1982, May 22, 2012, Spokane.

Bertel O. Olson, 88, Civil & Environmental Engineering 1957-1982, June 15, 2012, Pullman.

Wendy Pickelsimer, 58, Information Technology 1979-2011, July 14, 2012, Pullman.

Dale Tribbett, 84, Fac. Ops. 1963-1990, January 20, 2012, Hayden, Idaho.

WSU Alumni Association News

Awards and Volunteer Recognition

The **Alumni Achievement Award** was created by the WSU Alumni Association in 1970 to honor those who have made significant contributions to their professions, their communities, the world, and WSU. Of the nearly quarter of million people who have attended WSC/WSU since 1890, fewer than 600 have received this prestigious award. We salute the following Cougars who were recognized with the **Alumni Achievement Award** over the past year and thank them for the prestige they bring to their alma mater:

Retired Major General Paul J. Fletcher ’72

Chad Little ’85, former NASCAR driver

Rueben Mayes ’92 & ’00, retired NFL player

James B. Niblock ’42, composer/conductor



WSUAA Alumni Ambassador Award

The **Alumni Ambassador Award** was established in 1999 to honor former WSUAA presidents, Board of Directors’ members, local chapter leaders, and Alliance representatives for their outstanding volunteer service. We extend our thanks to this year’s winners for their contributions to WSU and the WSUAA.

Sarah Brown ’97, Alumni Ambassador—Award of Appreciation, Camas, Wash.

Wade Dissmore ’97, Alumni Ambassador—Award of Appreciation, Spokane, Wash.

Jen Evison ’04, Alumni Ambassador—Award of Appreciation, Seattle, Wash.

Lance Kaneshiro ’89, Alumni Ambassador—Award of Appreciation, Honolulu, Hawaii

Rhonda Kromm ’86 & ’05, Award of Appreciation, Pullman, Wash.

Charleen Neal ’03, Alumni Ambassador—Award of Appreciation, Pomeroy, Wash.

Dan Olsen, ’92, Alumni Ambassador—Award of Appreciation, Montesano, Wash.

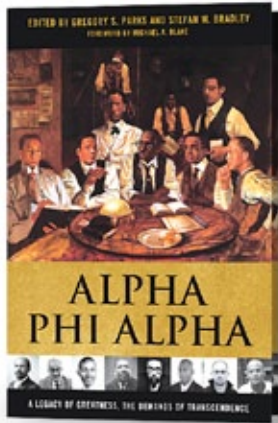
Danna Watson ’07, Alumni Ambassador—Award of Appreciation, Missoula, Mont.

Robert Williams ’79, Alumni Ambassador—Distinguished Service Award, Seattle, Wash.

WSUAA Adopted Cougar Award

Any person who exhibits genuine loyalty and affection for Washington State University and fully knows and understands that special allegiance known as “Cougar Spirit” may be sponsored by any alum for adoption by the WSU Alumni Association. More than 648 honorees have received the **Adopted Cougar Award** since 2004. If you know of a good candidate to join the Cougar Family call **1-800-ALUM-WSU** or visit www.alumni.wsu.edu/awards.

For more information about WSUAA and alumni chapters visit www.alumni.wsu.edu or call **1-800-258-6978**.



Alpha Phi Alpha: A Legacy of Greatness, the Demands of Transcendence edited by Gregory S. Parks and Stefan M. Bradley ('98 MA History) UNIVERSITY PRESS OF KENTUCKY, 2012 :: Review by Hannelore Sudermann :: Alpha Phi Alpha is the only black fraternity to be founded at an Ivy League school. Starting at Cornell in 1906, its founders were just a generation away from slavery and intent on creating an organization to foster academic scholarship, build lifelong friendships, and promote social progress. The organization soon opened chapters at Harvard, Howard, and Virginia Union University, eventually becoming one of the largest black Greek-letter fraternities in the country with more than 700 active chapters, including one at WSU.

Its well-known members include Martin Luther King Jr., W.E.B. DuBois, Jesse Owens, former Seattle mayor Norm Rice (who is now a WSU Regent), and Thurgood Marshall. The fraternity is also known for its social efforts, including the "Go-to-High School, Go-to-College" campaign and participating in voting rights efforts.

Bradley is an associate professor of history and African American studies at Saint Louis University and author of *Harlem vs.*

Columbia University: Black Student Power in the late 1960s. He and Parks, who teaches law at Wake Forest University, have pulled together a team of scholars to consider the fraternity from its historical achievements to its current practices. Both editors are members of the organization. They write that "In the end, our goal is to make the House of Alpha the best it can be and for it to live up to the high ideals present at its founding."

It was time, they write, to take a critical look at Alpha Phi Alpha with suggestions on how the brotherhood could continue its ideals and update its practices to both protect the image and brand and promote serious civic action. Among the weaknesses, they find that Alpha seems to lack a current public policy agenda or strong effort for social justice issues, instead relying on its history and identifying with the well-known efforts of its past members like Marshall and King.

The scholars look at Alpha Phi Alpha through the lenses of history, law, sociology, and African American studies. While the essays in this book are focused on the fraternity, the lessons can easily apply to other Greek-letter organizations. In their conclusion, the editors note that college fraternities and civil rights organizations throughout the country have lost their cachet and membership in recent years, and if Alpha is going to live up to its ideals, "significant work remains to be done." ☺



Kayaking Puget Sound and the San Juan Islands: 60 Paddle Trips Including the Gulf Islands by Rob Casey '91 THE MOUNTAINEERS BOOKS, 2012 :: Review by Eric Sorensen :: Fellow obsessives can relate to owning a catalog or guidebook that is transformed from the occasional reference to a well-thumbed springboard for the imagination. The Sears catalog fit that bill for rural America a century ago, as did the REI catalog for so many pre-Internet Northwest adventurers.

Rob Casey '91 had a similar feeling toward Randel Washburne's classic *Kayaking Puget Sound, the San Juans, and Gulf Islands: 50 Trips on the Northwest's Inland Waters*. "I carried one copy of the guidebook in my car and left another copy by my bedside at home," he writes in the introduction to his revised and updated edition. "I spent countless hours studying each trip."

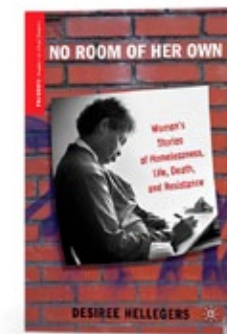
Now he's offering an update with more trips and

one of the most practical and inspirational armchair looks possible at the waters between Olympia and Canada's Gulf Islands.

As visitors to exotic waters know, it pays to bone up. You want plenty of advance warning about cold water, currents, and shipping routes, and few things are as daunting as searching for a campsite in fading light. A little local knowledge of, say, the winds channeled by Orcas Island's East Sound, can go a long way. Casey covers the basics and then some, laying out more than 50 pages of advice before the first route.

It also pays to fantasize. Casey provides the impetus, with maps, alluring historical, cultural, and scenic details, and a quick-trip reference to winnow down choices based on location, challenge, how long you want to go, and whether camping is available. This edition, the third, has 15 brand new trips, including several Canadian outings, and includes information for stand-up paddlers, a

specialty of Casey's. The logistical discussions are detailed, making this a thorough guide for the small-craft life aquatic. Just add water. ☺



No Room of Her Own: Women's Stories of Homelessness, Life, Death, and Resistance by Desiree Hellegers, WSU PALGRAVE MACMILLAN, 2011 :: Review by Jessica Bailey '13 :: "As a form of social punishment, homelessness is far sterner in many respects than sentences handed out in court for most criminal offenses," writes Desiree Hellegers, an associate professor of English and founding co-director of the Center for

Social and Environmental Justice at WSU Vancouver, in her introduction. In presenting the individual stories of 15 women in Seattle collected over two decades, Hellegers offers a view into the struggles and hardships that homeless women face in their daily lives.

One of the most compelling stories is of Mama Pam who has had to deal with domestic violence beginning with her father and then continuing with her husbands. At the time of the interview, Pam had been sober for just over nine years. She has turned her lifelong struggles into something positive and her story can be an inspiration for other women who have lived with and survived abuse.

The author takes the reader into these women's worlds with the gritty details of their personal stories and life on the streets. Even though interviews were conducted in the Pacific Northwest, this book gives insight into homelessness across the nation. ☺

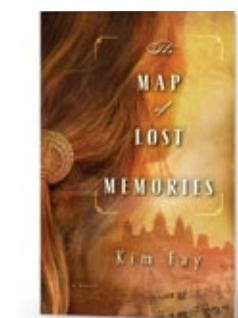
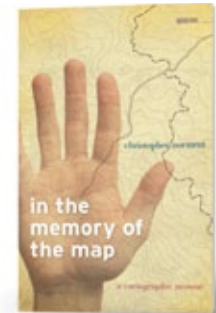


Boocoo Dinky Dow: My Short, Crazy Vietnam War by Grady C. Myers and Julie Titone 2012 :: Review by Larry Clark '94 :: When the United States was in the thick of the Vietnam War, a legally blind, out of shape young man from Boise volunteered. Grady Myers had been rejected previously because of his physical problems, but the Army of 1968, desperate to fill its ranks, snapped him up and shipped him off to Fort Lewis for basic training. This memoir of Myers's time in training and then in the madness of the conflict in Vietnam provides a very personal account of the people and events of the war.

After he returned from Vietnam, Myers studied art in Seattle and embarked on a career as a newspaper artist. His illustrations in the book capture his time as "Hoss," the big M-60 gunner with the 4th

Infantry. His sense of humor and compassion come through in both the pictures and the narrative. Myers told his stories to Julie Titone, now a communications director at WSU's College of Education, in the late 1970s. The two were married, then divorced, and decades later Titone worked with him to put his Vietnam experience into a book.

Titone lets Myers's language and great storytelling skills take center stage. The title of the book comes from a mispronounced and Americanized French phrase, *beaucoup dien cai dau*, meaning crazy and off the wall. The short intense period that Myers spent in Vietnam really shows the craziness of the time, from the soldiers (both good and bad), the general malaise, and the frighteningly off-kilter behavior. Myers died in 2011 but his book—part *M*A*S*H* and part *Full Metal Jacket*—brings to life a dark and uncertain war with humor and humanity. ☺



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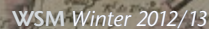
In the Memory of the Map: A Cartographic Memoir by Christopher Norment '82 UNIVERSITY OF IOWA PRESS, 2012 :: A refreshing recollection of the author's life as inspired and organized by maps. ☺

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Read about these books in *First Words*, page 3.



The Long River, or Dead River was discovered lately by the Baron LaFontaine as far as mark'd in the Map, that which is more to the Westward was driven by the Savages of the Nation of Guicizians on Bearskin. Unlike the Baron LaFontaine has invented these things, which is hard to refuse his being the only Person that has Travell'd into these vast Countries.



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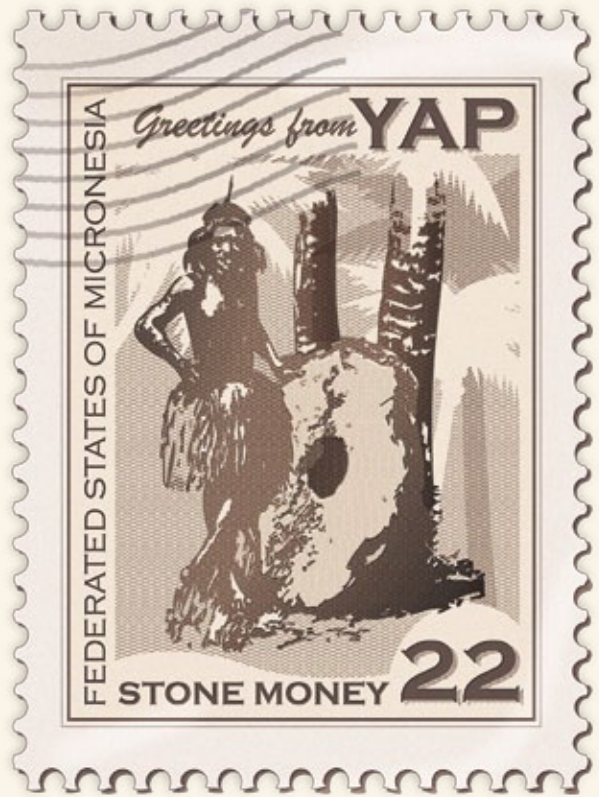
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