

Washington State

m a g a z i n e



THE SECRETS OF SLEEP

Anasazi Mysteries • Bridgeport Miracles • Words on Words



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features

22 Ghost Towns of the Anasazi

by Hannelore Sudermann • photos by Robert Hubner

Nearly 30 years ago anthropologist Bill Lipe and 25 WSU students and colleagues moved into a set of long-abandoned villages in southern Colorado. They had just a few years to explore the area's Anasazi history before the record was lost to the waters of the newly dammed Dolores River. Since then, scores of WSU students, alumni, and faculty have joined the effort to solve the puzzle of why, in the late A.D. 1200s, the Anasazi suddenly abandoned their homes throughout the Southwest.

CROW CANYON

by Hannelore Sudermann

30 Bridging Two Cultures

by Hannelore Sudermann • photos by Robert Hubner

Over the last decade, the Bridgeport School District student body transformed from mostly white to mostly migrant Hispanic. Low test scores and soaring dropout rates plagued the district—but only for a short while. This year, every student in the freshman class plans to graduate.

36 The Secrets of Sweet Oblivion

by Cherie Winner • photos by Robert Hubner

Early in his career, sleep researcher James Krueger was determined to purify the single factor that causes sleep. Now he knows better. But he and a diverse group of colleagues have turned WSU into one of the most intriguing and exciting sleep research centers anywhere.

NEURO, MICRO, OPTO

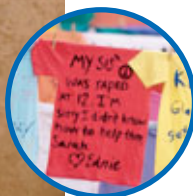
by Cherie Winner

SLEEPY LITTLE TOWN? NO MORE!

by Cherie Winner



COVER: Johannes Vermeer (Dutch, 1632-1675),
A Maid Asleep, 1656-57. Oil on canvas, 34½ x 30⅛ in.
(87.6 x 76.5 cm). The Metropolitan Museum of Art.
Bequest of Benjamin Altman, 1913.



ROBERT HUBNER



ROBERT HUBNER

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LETTERS



WSU MANUSCRIPTS, ARCHIVES, & SPECIAL COLLECTIONS

Murrow and WWII

Within the space limitations of a letter I cannot enunciate the reasons why I believe Edward R. Murrow was mistaken in his support for intervention in WWII. I can only list authors who have made, in my view, cogent argument. These are: Charles and Mary Beard, Edmund Wilson in *The American Earthquake* and *A Piece of My Mind*, John Swomley in *American Empire*, an excellent encapsulation, John Flynn in *The Roosevelt Myth*, and a myriad of others including Norman Thomas, Stuart Chase, Thomas Fleming.

Instructive too, and I think compelling, are the books on the Pearl Harbor attack, *Infamy*, by John Toland, and *Day of Deceit*, by Robert Stinnett. And A.J.P. Taylor has done the best job sifting reality from propaganda in his *Origins of the Second World War*.

Beverly Meyer, U.W. '50
Walnut Creek, California

How small the world can be.

I was delighted to read Hannelore Sudermann's article on the state's WSU-influenced wine industry, especially the relationship between Walla Walla Community College and WSU in the development of the Viticulture & Enology Center at WWCC.

As an architect on the design team for the North Carolina Center for Viticulture & Enology at Surry Community College in Dobson, North Carolina, it has been interesting to read how the facility at WWCC has been a catalyst in Yakima Valley. The SCC board is aware of the success at WWCC and has similar hopes for its proposed facility. It is a reminder for me of how small the world can be, a WSU guy in North Carolina working on a project which turns out to have a



CHRIS ANDERSON

That's One Small Step for Man... One Giant Leap for the WSU Alumni Association.



Today there are more members of the Washington State University Alumni Association than ever before. In the last year alone nearly 4,000 new members have joined. The Alumni Association is:

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- Re-energizing the Alumni Alliances and Constituency Groups
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- Dramatically enhancing the programs, services, benefits, and discounts offered to alumni and friends
- Increasing scholarship assistance to deserving students
- Finding ways to help alumni become meaningfully involved with WSU
- Enhancing the regional and national reputation of WSU
- Preserving the heritage of the Lewis Alumni Centre
- Developing stronger alumni-based corporate partnerships
- Recruiting more students of color and enlisting the help of more alumni of color in this important initiative

Membership is now more meaningful than ever. Join today and make a positive difference for WSU. Together we can make the WSUAA the greatest alumni association on earth...and beyond.

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Join Today.

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Thanks for the great magazine.

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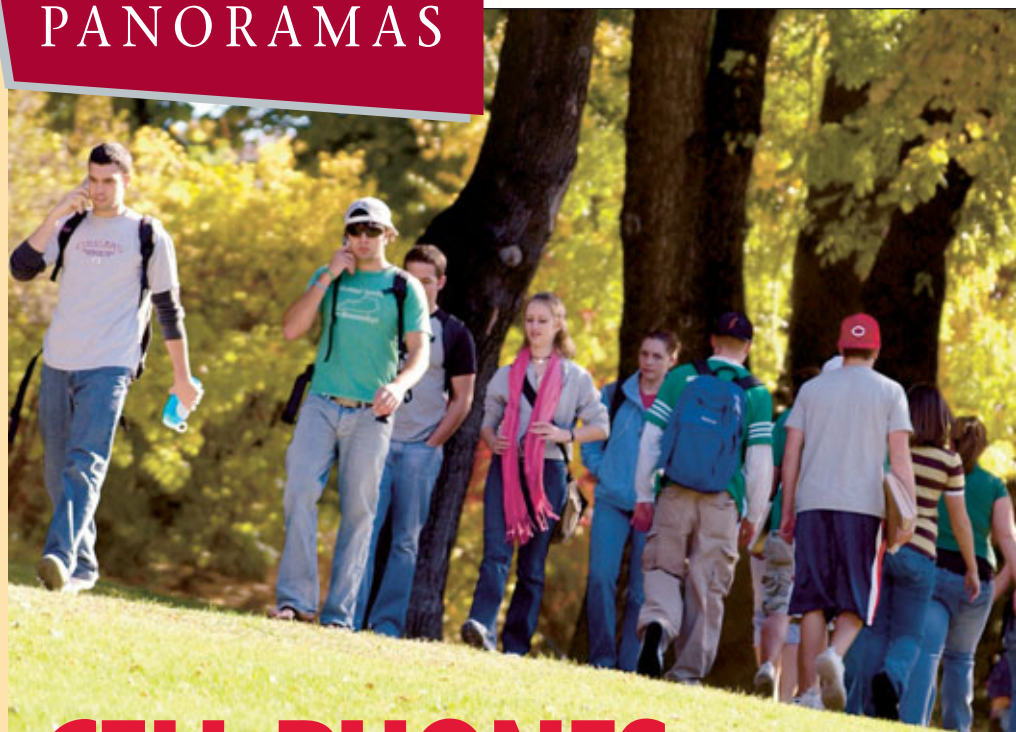
The secret's out.

I read with interest "Brewing Up Business" about the Water Street Brewing and Ale House [in Port Townsend] and the help they received from the Small Business Development Center. I am a small business owner in California and founder of Small Business California. I have been involved in small business advocacy for 30 years and served as chair for two years of the Small Business Administration Small Business Development Center National Advisory Board.

Water Street Brewing and Ale House's story is not unusual. SBDCs are one of the best-kept secrets in this country and serve hundreds of thousands of small businesses through training and counseling programs. This on a budget of less than \$90 million dollars. The return on investment in job creation and additional taxes for federal, state, and local governments is incredible. I would encourage any small business owner to look into the services of their local and state SBDC program and, even if you don't need help with your business, find out how you can help the program to serve even more small businesses in your area.

Scott Hauge '71, President
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PANORAMAS



CELL PHONES HELP STUDENTS AND PARENTS STAY CLOSE—SOMETIMES

MICHAEL JOHNSTON ('08 Bus. Admin.) switched his cell-phone plan in October. And the incentive wasn't just the free, high-tech phone or the low text-messaging fees.

"I can get those mobile-to-mobile minutes with my family now," says Johnston. "Now I don't have to worry as much about the minutes I use with them."

Johnston says he talks to either his mom or dad each day, for at least 15 to 20 minutes.

He's not the only one. He's part of the millennial generation for whom there is no typical, mandatory Sunday evening phone call home.

Now parents are getting the 9 a.m. Saturday call, the 2:55 p.m. Thursday call, and even the 2 a.m. "I-just-came-back-from-a-party" call.

With cell phones, text messaging, e-mail, and other high-tech gadgets and services, getting in touch has become simpler and faster.

"I talk to my parents every day," says Victoria Ringoen ('02 Hum. Dev.). "I'm really close with both of them."

Friends Jacklyn Stricherz ('08 Ed.) and Rachel Torell ('08 Hum. Dev.) also talk to their parents almost daily. They say conversation topics don't have to include classes. It's more about "checking in."

"It's not always about grades," Torell says. "It's just 'how's it going?' or 'what's new?' They like to know about exams, and I'll tell them how I did, but they are not asking for my GPA."

"I see my mom and dad as friends," Stricherz says. "It should be that way. We're not at the age where they would get mad at us now. It's more of a friendship thing."

However, some parents, say higher education administrators, do a little more than just "check up." Some have been known to yell at professors over the cell phone about a child's bad grade, or even to come to campus for the sole purpose of cleaning their child's dorm room.

Overinvolved or "hovering" parents could be preventing their children from achieving more, says Barbara E. M. Hammond, director of counseling and testing services.



ROBERT HUBNER

TOO CLOSE

"It used to be that 40 years ago, universities . . . acted as parents for the students, because it was hard to maintain contact," Hammond says. "Now, parents are involved with their kids more at all stages of education."

Terese King, director of New Student Programs, says although immediate technologies like cell phones are good, the parental involvement resulting from them has become intrusive at times.

"Many parents are calling on behalf of their students on things that the students should be dealing with themselves," King says. "It's one of the greatest harms, because then the child becomes sheltered and is unable to make decisions or take responsibility for himself."

King says she has seen some parents do everything for their children, including yelling at their child's roommate over the phone.

Hammond worries that such parental intrusiveness inhibits the

growth of independence and autonomy among students.

"The main drawback is that people learn by being challenged to deal with new things independently and gain confidence from it," Hammond says. "It's possible that you won't have that level of confidence if someone always does something for you."

Rodney White '08 says his parents are the antithesis of those who hover. He says his relationship with his parents has been stronger since he's gone to college, because they now treat him as an independent person. Once a week, he talks to them about his problems, which is more than he did in high school.

"We talk about family," he says. "They like to know how I'm doing and also if I need anything."

Johnston was close to his family before he left for college, and cell phones have made it easier to keep that bond, he says.

"I don't picture our conversation being a check-up thing," he says. "I tell them what I want to tell them. They never criticize me on what's going on. They don't poke into my business. They won't dive into anything that I won't talk about."

Michael's mom, Michelle Johnston, says she talks to each of her children daily on the cell phone for at least 10 minutes.

"They call me more often, because I'm not sure of class times and what not," she says. "It's about 75 percent them calling me, and 25 percent of the time I call them."

Michelle says she likes to know what's going on in her children's lives, but doesn't pry.

"They usually volunteer information," she says. "They keep me pretty informed about everything. Sometimes a little too much." ■

—Amy Trang '06

COOL, SOOTHING, LUCRATIVE *mint*

IF YOU DRIVE through Central Washington's mint-growing country in mid-summer, you're likely to be overwhelmed by the scent of mint rising like an exhalation—from the surrounding fields. In fact, your senses might deceive you into believing that not much has changed in the last 30 years or so. But during that time Rod Croteau, professor at the Institute for Biological Chemistry at Washington State University, has been doing research that has helped make Washington mint plants produce more and better peppermint.

Peppermint plants produce menthol, which is a terpene, as are all the other compounds Croteau researches. Terpenes are chemicals put together in specific ways from units containing five carbon atoms. Menthol is a small terpene, with just 10 carbons—small enough to evaporate, which is why we can smell it, says Croteau. Rubber is a terpene, a huge one with hundreds of thousands of carbons. Taxol, used in the treatment of breast cancer, is a terpene, as are some of the resin compounds made by trees to protect themselves from bark beetles.

"Nature uses only so many tools," says Croteau, so what he and his fellow researchers have learned through the work with mint has been applicable to work on these and other terpenes.

Peppermint flavoring is made from oil produced by the peppermint plant, oil that is a mixture of at least 25 different components. The primary ingredient is always menthol, however. "It's what gives you that cooling sensation,"



ROBERT HUBNER

mint

says Croteau. The oil mix produced by a given plant varies with location and growing conditions. Yakima oil is easy to tell from Flathead Valley oil or oil from other countries. American peppermint oil is a high-end, quality product, says Croteau.

The taste of a given peppermint product depends on the mix of oils used to flavor it, a mix that usually results from a blending of oils from plants of different regions.

Croteau began his work with peppermint in 1976, when he received the start of what has become continuous funding from the Washington Mint Commission. The Commission originally was looking for ways to improve the state's production of mint. The costs were high, there was competition from less expensive foreign oil, and synthetic oils could be made from petrochemicals. Croteau chose to concentrate on increasing yields and improving the composition of the oils.

At the start, the research involved classic biochemistry and the manipulation of agronomic practices. "We had little idea of practical molecular techniques then, for they didn't exist," says Croteau. Nor was it possible to use breeding programs or mutants to improve production. The mint plant is a sterile hybrid created hundreds of years ago in nature.

The biochemical research was aimed at determining the pathway the plant uses to make menthol. The experiments were

tedious and time consuming—it took the laboratory a decade to elucidate the nine steps in the main pathway the plant uses to produce menthol. Understanding that pathway was important in that it helped the researchers understand the effects of environmental and agronomic conditions on oil production and indicated agronomic manipulations that might alter yield or composition.

The lab studied those manipulations primarily in the greenhouse, where conditions could be standardized, and determined that both water use and irrigation method were important. Most irrigation of mint had been done by furrow irrigation but is now done mostly by overhead systems, a more economical method that unfortunately reduces yield. The plant's oil glands, which are where peppermint oil is made, are on the leaf surfaces, and overhead sprinkling disturbs them. In addition, the lab found that moderate, well-timed water stress increased the yield of oil with good composition.

Croteau's group also looked at harvest timing, traditionally based on word of mouth, and found that harvesting when 10 percent of the plants are in flower maximizes the yield of peppermint oils with good composition.

In the early 1990s, the lab developed a method for isolating oil glands from the leaves, providing a highly enriched source of material not only for biochemical studies but also for what would follow, studying the

genes responsible for making the proteins active in the pathway that produces menthol.

The lab's approach to genetic manipulation was different than most, however. To assuage the public's fear of moving genes from one organism to another, the lab used only mint genes to improve mint.

Once the genes active in the oil glands were isolated, they were compared to already characterized genes. Several genes were further studied and manipulated, and two were chosen to move into mint plants. One improves yield and was overexpressed so that the plant would make more than a normal amount of the protein it coded for. The other reduced undesirable oil components and was knocked out so that the plant would make less than normal amounts of these components. The two plants that resulted showed roughly a 50 percent higher yield and 50 percent fewer undesirable oil components, respectively.

Both of these genes have been incorporated into a plant that is the focus of much of the lab's current work. This plant will be used as parental stock, and a variety of other genes will be moved into individual parental stock plants. The goals for this work are to further increase the yield, up to double that of the parent plant, and to improve the quality of the peppermint oil produced. Differences that, again, you won't see or smell, but that will make Washington mint growers even more competitive. ■

—Mary Aegerter

DOGGY DREAM HOUSE

BASIL WAS A DOG in need of a home. And with just 30 hours to assess the whippet's personality and create and execute a design, a group of Washington State University design students were determined to give him one.

It was an intense competition with "a tremendously difficult timeline," says Keith Diaz Moore, assistant professor of architecture and landscape architecture, who coordinated the annual design-challenge charrette for the Interdisciplinary Design Institute. "To complete everything in 30 hours is pretty amazing—and to see the delicacy of some of these solutions is fascinating."

More than 100 students from a variety of disciplines—architecture, interior design, landscape architecture, and construction management—took part in this first-week-of-school event. They were broken into groups of four to five. For many, this was the first experience at WSU Spokane, having just moved to the Riverpoint campus to finish their degrees after two or three years in Pullman.

In the nine years since it started, the design challenge has had a community connection, which is kept secret until the charrette kickoff. This year, SpokAnimal, the Inland Northwest Humane Society, was the focus. With several dog-customers to choose from, the student groups planned, designed, and created model doghouses—many working through the night to complete the projects. They finished

with life-sized cardboard models with a renowned designer or artist as inspiration. Characteristics of Warhol and Le Corbusier, as well as Asian temples, Dr. Seuss, and 1950s diner influences, could be seen in some of the finished structures.

The winning team chose Basil as their client. After meeting him and his new owner, Carol Byrnes, owner of Diamonds in the Ruff dog training, the team honed in on the canine's capacity for speed, sleek lines, and graceful elegance. Their design, which was based on the Art Deco work of designer Raymond Loewy, was later rendered in wood and auctioned off in SpokAnimal's October fundraiser at Northern Quest Casino.

"I really enjoyed the charrette," says Kendra Lundahl, a senior architecture student and member of the winning team. "Throughout, our team tried to assess and utilize all the disciplines' unique strengths, which really turned out to be effective. It was kind of hard at first to

give up some of the control, but in the end it worked out better than I expected, because everyone got to do what they were best at."

One lesson the team learned from the charrette was that they are their own toughest critics. "Afterwards, we were thinking about all of the 'should haves,'" says teammate Whiney Wiggins. "It is nice when someone else looks at it and says 'what a nice house.'"

L. to r.: Students Josh Schafer '06, Kelly Gordon '07, Whitney Wiggins '06, and Kendra Lundahl '06 designed the winning doghouse for Basil the whippet in a 30-hour design challenge at the WSU Interdisciplinary Design Institute in Spokane.



JEFF GREEN

Their project, along with a few others built in wood for the auction, got rave reviews. "It is absolutely fabulous!" says Byrnes of the final product. "I can see Basil lying in it in the corner of our living

room. Or in a Hammacher Schlemmer catalog."

"The house is a statement piece," says Wiggins. "It is high-end doggy living—an indoor showpiece." ■

—Kaarin Appel '97 and Hannelore Sudermann

SEE SHELLS FAR FROM THE SEA SHORE

IF THE WINTER GRAYS have you hankering for a glimpse of beach life, head to the Washington State University Tri-Cities campus at Richland. There, more than 200 miles from Washington's coast—or just a few clicks down the Internet road—you'll find the Gladys Archerd Shell Collection. Looking at the incredible variety of whorls, spikes, and splashes of color, you can almost hear the gulls calling and feel the sand between your toes.

The collection was the lifelong passion of Gladys Doy Archerd, whose fascination with shells began in the early 1900s with childhood walks along the shores of the Olympic Peninsula. Over the years she became so knowledgeable about shell taxonomy, that Stanford University enlisted her aid in organizing its shell collection.

Today, the collection Archerd started includes about



Rough keyhole limpet
(*Diodora aspera*)



Nuttall's cockle
(*Clinocardium nuttalli*)



Smirnia's neptune
(*Neptunia smirnia*)

Three kinds of shells that can be found on Washington shores—and in the Archerd Collection at WSU Tri-Cities.

PHOTOS BY B.E. VAUGHAN

65,000 shells representing 60 major families of mollusks. It emphasizes shells of the Pacific Rim, but also includes shells such as the chambered nautilus and other exotic forms that Archerd obtained by swapping with fellow collectors all over the world.

After her death in 1983, her daughter, Artis Archerd Vaughan, and son-in-law, Burton Vaughan, donated the collection to WSU Tri-Cities. Mr. Vaughan, an adjunct professor of biological sciences at the Tri-Cities campus, uses the shells in his class on evolution.

"The seashell organisms are a real natural," says Vaughan. "Mollusks morphed into just about any shape imaginable. They're a neat way to talk about the progression of life."

Vaughan put the collection online in 2000, primarily to make it accessible to teachers and students who aren't able to get to the coast themselves. With hundreds of photos and a self-guided tour of mollusk families, it's a terrific resource for budding biologists, artists, or anyone with a yen for the shore. ■

—Cherie Winner

Check it out at the
collection's Web site:

shells.tricity.wsu.edu

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◆ PERSPECTIVE ◆

words on words

by Will Hamlin

MARK TWAIN is rumored to have said that he had no respect for a man who could spell a word in just one way. Many college students wish that their English professors shared this view. Yes, it's true that conventional spelling promotes effective communication—no one denies it—but at the same time there's always a loss when capitulation to conformity extends too far. A good example is vocabulary usage, particularly in academic settings. Am I the only person in the University who's heard the words "benchmarking" and "networking" a few times too often? Somehow I doubt it. In my own field of study, English literature, I've lived to see the day when "text" does most of the work formerly shouldered by "story," "lyric," "play," "treatise," "novel," and a dozen other terms: a poor exchange by any standards. And while I know there are often good reasons for the dominance of certain speech habits and locutions, I regret any loss of linguistic diversity.

New words, of course, are entering English all the time—and every other language too. I love this fact. Five years ago I'd never uttered the words "blog," "wiki," "emoticon," or "pixelated"; 10 years ago I didn't know that "spam" could be a verb or that "chill" could mean "relax"; and when I graduated from college, the now-indispensable "phallocrat" was entirely unavailable. So I have no complaint with novelty, in and of itself. What I lament, rather, is the neglect of thousands of perfectly good words—especially when such neglect is com-

bined with the pathological overuse of a few. And this, along with inattention to the reverberations of words—their sounds, their connotations, their groundings in metaphor—is what disheartens me about the routine language habits of academe.

Part of the problem lies with our linguistic mavens. The Strunk-and-White bias against Latinate diction, for example, has never made much sense to me. "Anglo-Saxon is a livelier tongue than Latin," they tell us, "so use Anglo-Saxon words." "Gut," after all, is a "lustier" noun than "intestine." Lustier? Maybe—but I'd still like the option to use both. Besides, some of my favorite words come from Latin. Take "defenestrate": to throw a person or thing out a window. I'm not even sure the Anglo-Saxons had windows. True, I don't use this verb all that often in my lectures and essays, but I'm deeply reassured by the fact that it's there when I need it. Or, alternatively, take "flaccid." Not typically championed by men, this Latinate adjective nonetheless has striking potential for metaphorical deployment, as when an editor tells an aspiring novelist that "it would be difficult to underestimate the potency of your flaccid prose."

But blaming the experts only goes so far. The academic rank and file has to take the majority of the responsibility. And much of this can be attributed to sloth: to a simple failure to listen, think, remember, and imagine. According to one of my friends—a rogue librarian with a

text doable buy
buy-in feedback text
reality check buy-in

penchant for language trivia—English currently contains about 54,000 word families, each group comprising words with a common root, like “hysteria,” “hysterical,” “hysterectomy,” and so on. Yet the active vocabularies of well-educated native speakers are often absurdly small—shrunk and atrophied, like underused quadriceps. Worse still, the words that remain are often chosen with a defeatist calibration to the prevailing verbal standards of the nearest discursive community, so that ugly words like “normalcy,” “revamp,” and “fungible” appear with perverse frequency, as do terms such as “reality check,” “action plan,” “focus group,” “norming session,” and “faculty buy-in.”

FOR WHAT IT’S WORTH, here’s my own personal candidate for the most hideous word currently in wide academic usage: “feedback.”

from the remainder of my life will allow me to lapse into senescence somewhat more gracefully.

Okay, I’m a word curmudgeon; I confess. I have strong opinions about language—some of them totally irrational. But by the same token I don’t mind at all when my students coin new terms, even if they do so inadvertently. Last year, for instance, one young woman noted in her essay on *The Taming of the Shrew* that she despised Bianca’s “insipitude.” Shakespeare would have been delighted. Indeed, we should keep Shakespeare in mind when we think about diction: he was a language sponge, soaking up every word that met his eyes or ears, and his criterion for usage was local efficacy, not cultural pedigree. Being a playwright, he might even have found a use for “feedback”; it’s the kind of word that Rosencrantz would fancy, not to mention Octavius Caesar. And one can only daydream about the utterances Shakespeare

might have conceived if he’d had access to great post-Elizabethan words like “filibuster,” “moxie,” “barbecue,” “amok,” “payola,” “quark,” “scalawag,” “bazaar,”

“akimbo,” “whinge,” “behemoth,” “taboo,” “jalopy,” “yonic,” “palooka,” “vigorish,” “junta,” “bamboozle,” or “schmuck.”

Admittedly, most of us cherish a few words that we seldom find occasion to use. I myself have never said “skiapod” to another human being, even though I desperately wish to do so. But we can’t leave “carapace” solely to the crustacean experts, “deliquesce” to the art historians, or “chthonic” to H.P. Lovecraft. Still less can we wilfully ignore the figurative groundings of many common words. Consider the metaphor in “understand”: to assume an upright position beneath something, to support, to bear. Think of Atlas with the earth on his shoulders. Or, according to a different etymology, “under” may have meant “amidst” to the speakers of Old English. Either way, once you acknowledge the presence of the embedded metaphor, you can never again claim that you “understand” quantum mechanics or baroque counterpoint with the same blithe confidence that you may once have felt; you’re chastened by the image, by the thought of what it means to stand under or in the midst of something else—a body of historical knowledge, a set of quadratic equations, a book of poems. And while announcing that “understand” is one’s favorite word is a bit like saying that whole wheat bread is one’s favorite food, still, for me, it’s the truth.

Few people can keep their minds and ears open with constant imaginative attention to the words that come and go in their daily lives. A few more, perhaps, can do so when they sit down to write. But when we move from individual words to complex phrases and sustained paragraphs, we’re often reduced to wonder at the seemingly effortless brilliance of the true writers, those with enduring talent. Take a sentence by James Joyce—just about any sentence in *Ulysses*. Read it aloud: you’ll hear that it has more verbal life than entire shelves of doctoral dissertations. Or try to parse a Shakespearean construction like Prospero’s reference to “the

**filibuster . . . moxie
 . . . barbecue . . . amok . . . quark . . .
 payola . . . scalawag . . . bazaar . . .
 akimbo . . . bamboozle . . . whinge . . .
 palooka . . . behemoth . . . taboo . . .
 jalopy . . . junta . . . schmuck**

Maybe it’s just me, but the metaphor here isn’t quite dead yet; it’s still steaming and reeking and pullulating. “How would you like your feedback, sir? In a zip-loc bag? Or shall I just pour it on your desk?” No doubt someone will remind me that “feedback” has a distinguished prior history; long before it was appropriated by academe (and indeed by American society at large), it spent a useful career in radio technology. Too bad: I still hate it. Along with “spendy,” “copacetic,” “doable,” “brainstorm,” “push the envelope,” and “hunky-dory,” it’s one of those verbal abominations whose complete absence



in reality check feedback network
 doable reality check networking
 feedback text doable network

dark backward and abysm of time.” It defies exegesis; it resists being pinned down and anatomized in any grammatical taxonomy. Yet it means and signifies beyond our ability to explain.

So, yes, I’m disappointed by the poverty of language use in the academy, though I recognize that scarcely anyone looks good when compared to the likes of Emily Dickinson or George Eliot. How many people, after all, could write the sublime closing paragraph of *Middlemarch*, let alone the whole book? Still, we could do better than we do, and we owe it to our students—and ourselves—to make the effort. As someone who has resorted to pretentious literary jargon more often than I care to remember, I’ll be the first to count myself among the reprobates. But at least I can promise that I’ll never again use “hegemony,” “interpellation,” and “commodity fetishism” all within the same prepositional phrase.

BECAUSE LANGUAGE is so vast, each of us is inevitably subjected to one degree or another of linguistic ignorance. I stand in awe of a colleague who speaks four languages fluently, yet he sometimes tells me how inadequate his skills seem to him when he listens to multilingual conversations in the café-bars of Europe. Personally, I’m saddened by the thought of all the words I’ll never know: evocative and exquisite words, words built from startling metaphors, words that designate realities I haven’t yet learned to perceive. And this is to say nothing of the charm of idioms I’ll never hear, the breathtaking concision of some throwaway phrase in Arabic or Swahili or Quechua. But for those of us who think and work in English, the choice still exists to infuse our speech and writing with a bit more energy, resisting the tired, the clichéd, and the mindlessly fashionable. We can experiment; we can reject colonization by the prosaic empires of business and marketing; we can reach, resist, stretch, twist, create. In what Shakespeare calls “the quick forge and working-house of thought”—the human imagination—there’s endless potential for verbal innovation and lexical discipline. And the university is as good a place as any to carry out such work.

Thanks in advance for your feedback. ■

*Will Hamlin, an English professor at WSU, teaches Shakespeare and Renaissance literature. His most recent book, *Tragedy and Scepticism in Shakespeare’s England*, was published last year in London.*

◆ FOOD AND FORAGE ◆

EAT MORE GARLIC

Easy steps toward greater happiness

IF THERE’S JUST ONE thing you plant in your garden, make it garlic.

For one thing, it’s extraordinarily easy to grow. Plant it around Columbus Day. Cover it with mulch. Or don’t. Water it now and then when it starts growing again in the spring. And that’s about it.

You can start eating it at any stage, though obviously you don’t want to eat it all up before it develops heads. Thus, you need to plant

a lot. You can chop the young shoots and add to a stir-fry. Pull the developing young heads and slice, using it for a mild flavoring. In early summer, if you’ve planted the stiff-neck varieties, the plants will form long thin necks, or scapes. While they’re still tender, cut them in manageable lengths and steam or sauté. They taste like mild asparagus.

But clearly your main quest is the mature heads. Once they’ve devel-

GARLIC SOUP

Use any variety or *terroir* of garlic for this great comfort food. For the last couple of years, my 13-year-old has requested pizza and this garlic soup for his birthday. This recipe is adapted from *The Great Garlic Cookbook* by Sophie Hale.

2 heads of garlic, cloves separated and unpeeled

5 tablespoons olive oil

5 cups chicken stock

2 teaspoons fresh thyme (or 1 teaspoon dry)

½ teaspoon salt

White pepper

3 egg yolks

Grated Cougar Gold cheese

Blanch the garlic for one minute, drain, and peel. Cook, but do not brown, in half the oil, for 10 minutes. Add stock, thyme, salt, and plenty of white pepper. Simmer 30 minutes and check seasoning.

Sieve or blend the soup. Return to saucepan to keep hot.

Beat egg yolks and gradually add remaining oil. Stir a couple of spoonfuls of soup into the egg mixture. Remove soup from heat, and add egg in a thin stream, stirring well.

Sprinkle on cheese, and serve.

Repeat every day. This will get you through till spring.



Pullman is home to a number of collections, including beets, lettuces, beans, chives, leeks. And garlic. About 250 different accessions.

SHELY HANKS

oped individual cloves, around mid-June, start using them the way you're used to using garlic. Or separate the cloves, pull off the thin skin, and roast them on the grill, brushing on a little olive oil. Stiff-neck garlic is best for this, as the cloves are fewer and much bigger than the cloves of the soft-neck garlic, which is generally what you'll find in the average grocery.

By the way, there are many arguments regarding the classification of garlic. For our purposes, we'll simply divide it into "stiff-neck" and "soft-neck." Soft-neck garlic keeps a little longer. That's why it's grown commercially. Stiff-neck garlic has larger cloves, peels easier, and tastes better. In other words, yes, you need to grow your own. In lieu of this, however, many smaller market gardeners grow stiff-neck, so you should be able to find it at your farmer's market or food coop.

The heads are mature by mid-

July and should be harvested when most of the plant has turned brown. Tie them in a bunch and hang them in a shady spot. After they've dried for a few weeks, trim the dead stalk and excess roots and store in a net bag. Depending on the variety, the heads will keep until your next crop is ready.

Garlic is not a big crop in Washington, even though we were, a few years back at least, the fourth largest garlic grower in the country. Regardless of production level, Washington State University is a garlic mecca. Pullman is home to the Western Regional Plant Introduction Station, part of the USDA's National Plant Germplasm System, which is responsible for seeking out and maintaining plant diversity.

Collectors for the system travel all over the world looking for new "accessions" of plants to add to the collection. Pullman is home to a number of collections, including

beets, lettuces, beans, chives, leeks. And garlic. About 250 different accessions.

Garlic is propagated clonally, from vegetative tissue rather than true seed. Perhaps because it has been domesticated for so long, and because it grows so well and conveniently from individual cloves, it has not been selected for its ability to set true seed. And doesn't. What that means in the short term is that it must be grown out every year in order to preserve its germplasm, the clove.

Barbara Hellier is the caretaker, or curator, for the garlic collection, as well as several others. Last year she traveled to Uzbekistan to collect new accessions of wild carrots and alliums, the family to which garlic belongs. She and fellow collectors found six new accessions of garlic, as well as 10 other alliums. Again because garlic has been domesticated for so long, it is hard, says Hellier, to tell whether a line

of garlic is wild or not. For all we know, Uzbeki garlic may have descended from a clove dropped from a caravan pack three thousand years ago.

As I mentioned earlier, Hellier maintains about 250 different lines of garlic. Garlic varies wildly in appearance, ranging from small-headed squat plants to softball-sized heads with scapes reaching four feet high. They also vary wonderfully in pungency and taste.

To every garlic head's interest, however, the genetic diversity of that collection has recently been called into question. Gayle Volk, who earned her doctorate in botany from WSU a couple of years ago, now works for the National Plant Germplasm System in Fort Collins, Colorado. She is the lead author of a recently published paper reporting on genetic analysis she and her colleagues performed on 211 lines of garlic from our collection, as well as commercial varieties. They found that many of those lines—including 64 percent of the Pullman accessions—are genetic duplicates. In spite of this, Hellier has no plan to eliminate those duplicates from the collection. She bases her approach on the 1-percent-probability difference that remains. That difference may be small, but it may mean all the difference in the adaptability of a line.

Even within a particular line of garlic, two genetically identical plants can look, taste, and grow very differently, due to garlic's enormous "phenotypic plasticity." What this means is that within the range of its genetic identity, it has great flexibility, one line responding much differently to varying climates and soil types. In other words, garlic, like wine, depends on its *terroir*. ■

—Tim Steury

SPORTS|SEASONS

SPORTS

SEASONS

WHEN PULLMAN WAS A
SKI TOWN

"Everybody still skis tremendously," says Richter. "They're all in really good shape."

IN 1952 THE WASHINGTON State College ski team placed first in the Northern Division, the Pacific Coast Conference, and the North American International Intercollegiate Tournament in Banff, Alberta. In 1953 the Cougars won every University and College meet they entered, including Banff and the National Intercollegiate Championship at Snow Basin, Utah. The following year the National Intercollegiate Championship became the NCAA Division I championship, which took place in Reno, Nevada. The Cougars were favored to win that as well. But the coach of the University of Denver team managed to get two of the Cougars' skiers declared ineligible as transfer students, and Denver won.

Fast-forward about 50 years. Bruno Richter '55, who like most of his teammates had skied all four

events—slalom, downhill, cross-country, and jumping—and one of the two Cougars declared ineligible as a transfer student (he was not), was now head of VISA operations in Europe. He'd traveled from Germany in mid-April to visit VISA headquarters in California. He'd brought his skis along and rented a car and driven up to Squaw Valley.

Richter got on the lift with another fellow about his age, and they struck up a conversation. Turned out the other fellow was from Whitefish, Montana. Well, you must know Bill Noble, said Richter, just on the off chance.

"I am Bill Noble," said his newly re-discovered old friend ('58 D.V.M.), who was on the ski team with Richter in 1953.

From that chance meeting, the WSC ski teams of the early 1950s reformed. Richter and Noble got in touch with others they could track down, and they got together to—what else?—ski.

That first reunion year, they met at Whistler, where one of the skiers

has a house. They've also met at Rossland, where one has a house. And Squaw Valley . . . where yet another team member has a house.

Joining Richter and Noble were Jerry Gaiser, Gordon McKenzie '55, Al Fisher '54, Sandy Jacobson '57, Chuck McKillop, and Bard Glenne '57.

"Everybody still skis tremendously," says Richter. "They're all in really good shape."

Missing, however, were the Norwegians who gave the Cougar ski team such an international cast: Svein Huse '53, Einer Husevaag, Nils Hegvold '53, Lars Hals-Hagen '55, Mads Danielsen '56, Sverre Wegge '55, and Toby Falkanger.

But the Norwegians, some of whom also migrated to the University of Idaho, were only the obvious international names. Gordon McKenzie is Canadian, as is Al Fisher. George Merry '55 skied on the 1952 Canadian Olympic team before coming to WSC. Richter himself came to WSC from Germany as a Fulbright scholar.

ABOVE: Members of WSC ski teams from the early 1950s gathered at Big Mountain, Montana, in March 2005: Bruno Richter '55, Jerry Gaiser, Bill Noble '58, Gordon McKenzie '55, Al Fisher '54, Sandy Jacobson '57, Chuck (Ferg) McKillop, and Bard Glenne '57.

The ski team traveled extensively all over the Northwest, with meets in Rossland, Reno, Stevens Pass, and other locations. Richter admits there were extended periods when he didn't see the inside of a classroom.

Aside from the success of the varsity ski team, skiing played a large part in the WSC culture during the 1950s. (The sports page of the *Evergreen* seemed more diverse back then. Skiing got nearly as much attention as football. Also getting considerable play were women's skiing, gymnastics, swimming, boxing, wrestling, and of course Buck Bailey's baseball team.) *Evergreen* stories breathlessly tell of campus excursions by bus and accompanying caravan to the St. Joe Ski Bowl on the Palouse Divide, just south of Emida, Idaho.

Although it was gone by the time Richter arrived, a ski jump occupied the hillside below the present-day CUB.

The St. Joe ski area was longtime athletic director "Doc" Bohler's dream, as the *Evergreen* recounts in a 1951 issue. Bohler had started scouting the area in the mid-1930s for a good ski area within an hour's drive of campus. The Forest Service finally directed Bohler to a natural "snow pocket" near Emida. After Bohler approved the site, WSC cleared a ski area. In the late 1930s, the Civilian Conservation Corps and Forest Service built a lodge there.

Richter and his teammates plan to regroup again this year at Rossland the end of February. In addition to himself, Fisher, McKenzie, Jacobson, Glenne, McKillop, and Gaiser, he also hopes to pick up Don Wells along the way. Wells was the head of the philosophy department at WSC for years and was also the faculty advisor for the team. ■

—Tim Steury

Faith and imagination transform a Pullman landmark

FAITH AND IMAGINATION came into play last spring when Jillian Potts ('06 Pol. Sci./Pre-Law) signed an agreement to lease a unit at the Greystone Church Apartments sight unseen. Not that there was anything to see. It was months before the walls of her apartment would even be built.

Still, with just the blueprints as a guide, Potts committed to one of the most exciting projects Pullman has seen of late.

Greystone Church, a long-neglected century-old landmark on College Hill, found new life last fall as an apartment house for 47 tenants, the majority of them Washington State University students.

The challenge for the new owners—Glenn Petry, a former WSU finance professor, and his wife, Melodie—was to remodel a historic building that was falling to the ground. Realtor Dick Domey recalls the many problems the building suffered during the 26

years it was vacant: vandalism, a rotting roof, and water leaking into the corners, not to mention large chunks of stone plummeting from the façade. "It was so close to being demolished," says Domey, who brought in several companies to estimate the cost of tearing it down. Because the price was close to \$700,000, the former owners decided to just keep it vacant, he says.

But Petry had long had his eye on the Greystone, and in April 2004 jumped at a chance to buy it. His grand ideas for the property included a coffee shop, theatre

house, and museum. But he went with what he knew best: apartments. As owners of more than 145 units in Pullman, the Petrys wanted the restoration of the church to be a gift back to the city they had worked and lived in for more than 27 years. Attention to detail and quality were essential. They spent \$140,000 on the ceiling alone, restoring it to the wooden masterpiece it had been more than a century ago. Total renovation costs were about \$1.5 million.

"We decided not to spare any expense on this," Petry says. "We wanted to make this building a

Senior Jillian Potts is one of the first tenants in the newly remodelled Greystone Church. Before developers converted the century-old building last year, it had been condemned.



ROBERT HUBNER

place that would be around for decades."

Even with the modern conveniences installed in the apartments, including new appliances, carpeting, and plumbing, it was important to the Petrys not to forget the history of the place. The lobby holds a small exhibit of mementos from the former church, including organ pipes and a Sunday school desk. And the apartments feature many of the architectural elements,

like stained glass windows and stone walls.

The church was built on land bought by the United Presbyterian Church in 1898. The last service was celebrated there in 1977. In 1988, community members formed the Greystone Foundation to put the site on the National Historic Register and to buy and restore the building. While the organization did get the property declared a landmark, the church was bought by a Califor-

nia couple before the foundation could meet the price. But that couple never managed to find the money to remodel the building.

In late August, the first tenants moved in. Rent is on the higher end for College Hill properties, Petry says. But plenty of people want to live there.

Most tenants say their new home has turned them into guides for curious community members. Pat Campbell ('06 Pol. Sci.) lives in the

five-bedroom apartment at the front of the building. The unit features the structure's largest stained-glass window and bedrooms in the two towers.

"I've walked in from the parking lot and had several people ask if they could see my apartment," he says. "But I don't mind giving tours. I think it's a once-in-a-lifetime chance to live in a unique place like this." ■

—Amy Trang '06



ROBERT HUBNER

the clothesline project

Haunting and colorful, the Clothesline Project usually stops students in their tracks as they head across the Glenn Terrell Mall to class. It's a display of several hundred t-shirts made by people connected to Washington State University with messages about how violence, particularly against women, can affect individuals, families, and communities. For a week last October, the campus community had a chance to read the words of victim/survivors and their friends. ■

WSU's SOLAR SAGA

photography by Shelly Hanks

WASHINGTON STATE UNIVERSITY students in architecture, construction management, interior design, and engineering designed and built a solar house, including all of its systems, from the ground up. In September 2005, they took the home to Washington, D.C., to take part in the Department of Energy's Solar Decathlon competition on the National Mall. The competition required students to plan and build a 650-square-foot home and provide it with all the modern conveniences, including heating and air conditioning, refrigeration, hot water, lighting, appliances, and communications—all powered entirely by the sun.

Which was fine—except for the torrential rains that hit D.C. the week of the decathlon.

Tina Hilding recounts the saga of WSU's 2005 solar decathlon in "Better Living ... through Solar." ■

Read it at
Washington State Magazine Online:
wsm.wsu.edu



TOP: Members of the WSU Solar Decathlon team posed for a group portrait with their completed house before disassembling it for shipment to Washington, D.C.
ABOVE: Visitors braved the rain to view the WSU entry on the National Mall.

BELOW: The team worked on the solar house during the summer of 2005.





GROWING AS AN ARTIST

IT'S AN ARTIST'S DREAM to be recognized by experts and curators and to have your work shown by an internationally-known museum.

Isaac Powell, a 26-year-old fine arts student at Washington State University, realized that dream last fall when his painting won a spot in a traveling exhibit that opened at the Smithsonian Institution.

His piece, *Growthplate*, took grand prize in the nonprofit VSA arts juried exhibit of young artists with disabilities. It also brought him a \$20,000 award, which he says has already been funneled back into his art.

Lean, hip in black-rimmed glasses, and relaxed, he settles into his chair in his 12-by-12 studio in WSU's Fine Arts Building. The windows along the north wall look out over Martin Stadium. They offer quite a view, especially on game days, says Powell.

On one wall hang two of his latest pieces, paintings on birch plywood, a medium he says gives him more of a feeling of permanence than canvas.

When starting on a piece, Powell creates a situation for himself and

then sets about reducing it. He begins by filling the wood plane with multiple lines and forms with graphite and ink, and then painting over them with a neutral-colored acrylic, sanding it down, tweaking and tuning, finding and isolating forms, until just a few details remain. The result is a less complicated surface, but with a sense of something lurking just underneath. "I like to start out pretty chaotic and colorful. It's like I'm setting myself up with a problem, an equation that I need to solve," he says. "What you see in the end is the solution."

The solution often involves plants and flowers in various states of definition, and in the case of *Growthplate*, images that make him think of the differences between his right arm, which was damaged prenatally, and his left. "The flowers are kind of analogous of bodies and figures," he says. "I have fully rendered flowers, and then images that are less rendered."

Powell has no problem painting over works that aren't going well, nor does he have an issue with sell-

ing his finished projects. "It's not hard at all to let them go," he says. "Any more work on them would be taking away from another painting. And it's a nice feeling when people want your work."

The M.F.A. student started his college career at Stephen F. Austin State University as a forestry major, but then realized he was more into the beauty of forests than the art of managing them. So he signed up for drawing class. The effort took him through an M.A. degree in art

Isaac Powell, a graduate student in the Department of Fine Arts, recently won national attention for his work when a piece took grand prize in a juried competition for young artists with disabilities. The competition winners are now part of a traveling exhibit that opened at the Smithsonian last fall.

at SFA State, before he and his wife, Valerie, also an artist, decided it was time to try living somewhere new.

At WSU they found a fine arts program that suited them both. Her studio is just two doors down from his. The most valuable part of coming to a new school is getting to work with a new group of artists and professors and have their feedback and influence.

Powell put together his VSA contest entry just as he was leaving Texas for Pullman. With so many other things to manage, he forgot that he entered. But when he saw the Washington, D.C., phone number on his cell phone this fall, it came rushing back. "I knew it was good news," he says.

He's grateful for the recognition and happy with the money, but most important, "It's great just being able to put the Smithsonian on your resume." ■

—Hannelore Sudermann

A detail of *Coda*. Acrylic, graphite, and ink on birch plywood.



COUGAR BASEBALL



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NEARLY 30 YEARS AGO anthropologist Bill Lipe and about 25 of his Washington State University students and colleagues moved into a set of abandoned villages in a remote corner of southern Colorado. They spent their summer days there on a mission to uncover the stories of some of America's oldest ghost towns.

As co-investigators with the University of Colorado on a Bureau of Reclamation project, Lipe's team had just a few years to salvage important portions of the historical record before nearly 4,500 acres along the Dolores River would be flooded by the McPhee Reservoir.

Ancient Anasazi communities once thrived there and throughout the Four Corners region of the Southwest. Some have collapsed into piles of rubble. Others still stand as awesome fortresses tucked in the cliffs below Colorado's high mesas. And still others, like those along the Dolores, have been lost forever to development, farming, mining, and dams.

The WSU team focused on an area that had seen its largest populations from A.D. 600 to 900. As the project started, the researchers realized they were on the verge of uncovering a large and complex society, with more than 1,600 sites in the Dolores River basin.

There was so much to learn and so little time to look.

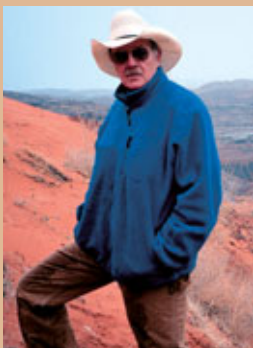
Fortunately, Lipe knew the territory. As a graduate student in the late 1950s he was a crew chief on the nearby Glen Canyon project in Utah, salvaging material in areas destined to be flooded by Lake Powell.

As a senior scientist on the Dolores project from 1978 to 1985, the lanky professor brought students, faculty, and WSU resources to the largest federally-funded project of its time. There Lipe and his University of Colorado colleagues oversaw excavations at more than 100 sites, doing the exciting work of exploring village sites, recovering pottery and household items, and bringing new information from a period that hadn't really

been explored since the 1930s.

Lipe did a bit of everything. He synthesized the findings to provide an overview of the project. He provided basic training on the use of shovel and trowel. He even performed the unpleasant task of stirring the camp latrine with a pole so it could be pumped out at the end of the summer.

The researchers took on many roles, since their mission was urgent: to move in and collect information fast enough to meet the timeline of the dam. Still, they left a rich legacy of material for future archaeologists and

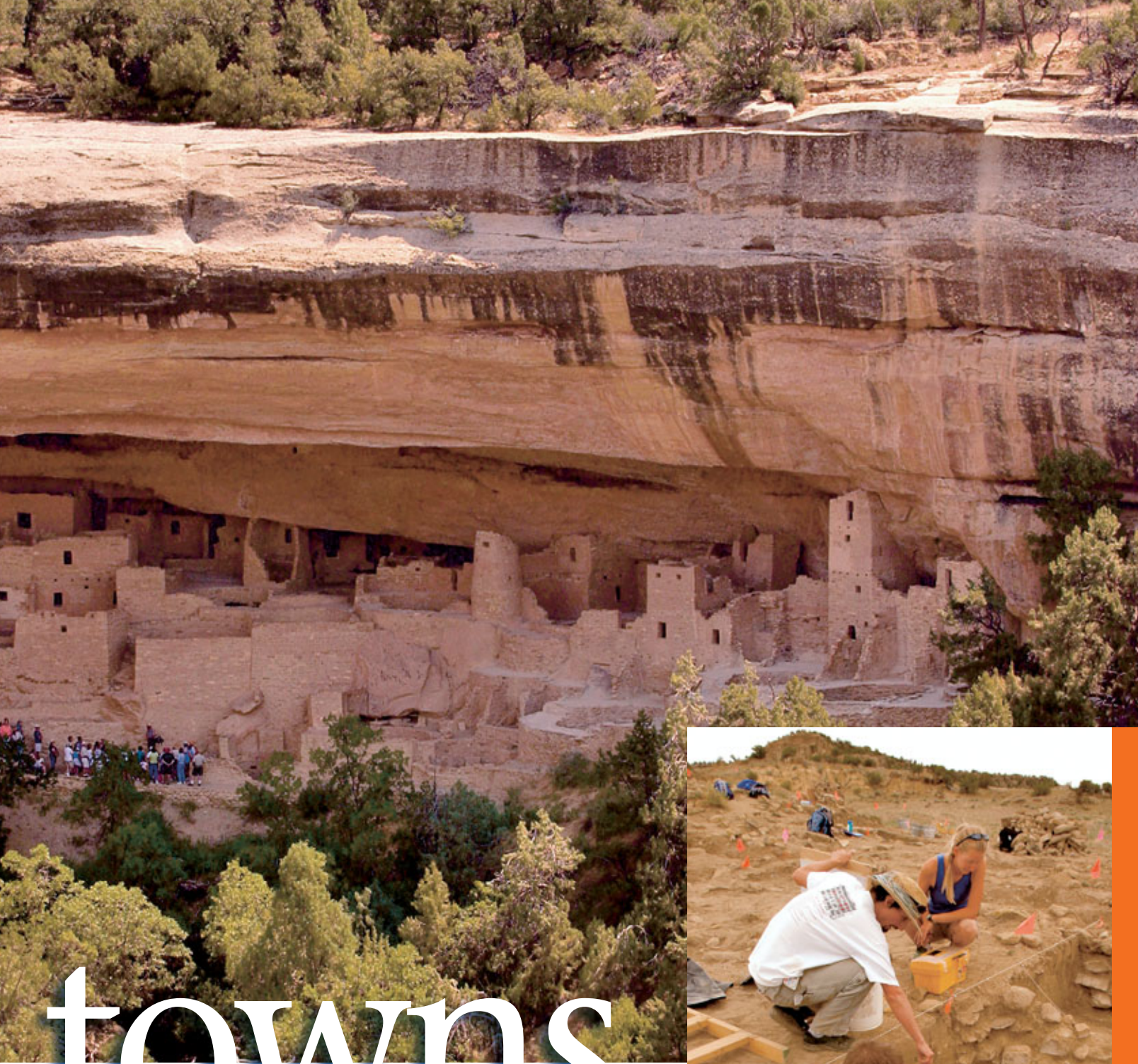


ABOVE: Professor Bill Lipe is WSU's first expert in Southwest archaeology. His work there in the 1970s and 1980s established a WSU presence in the Four Corners area.

RIGHT: Cliff Palace at Mesa Verde National Park in Colorado.



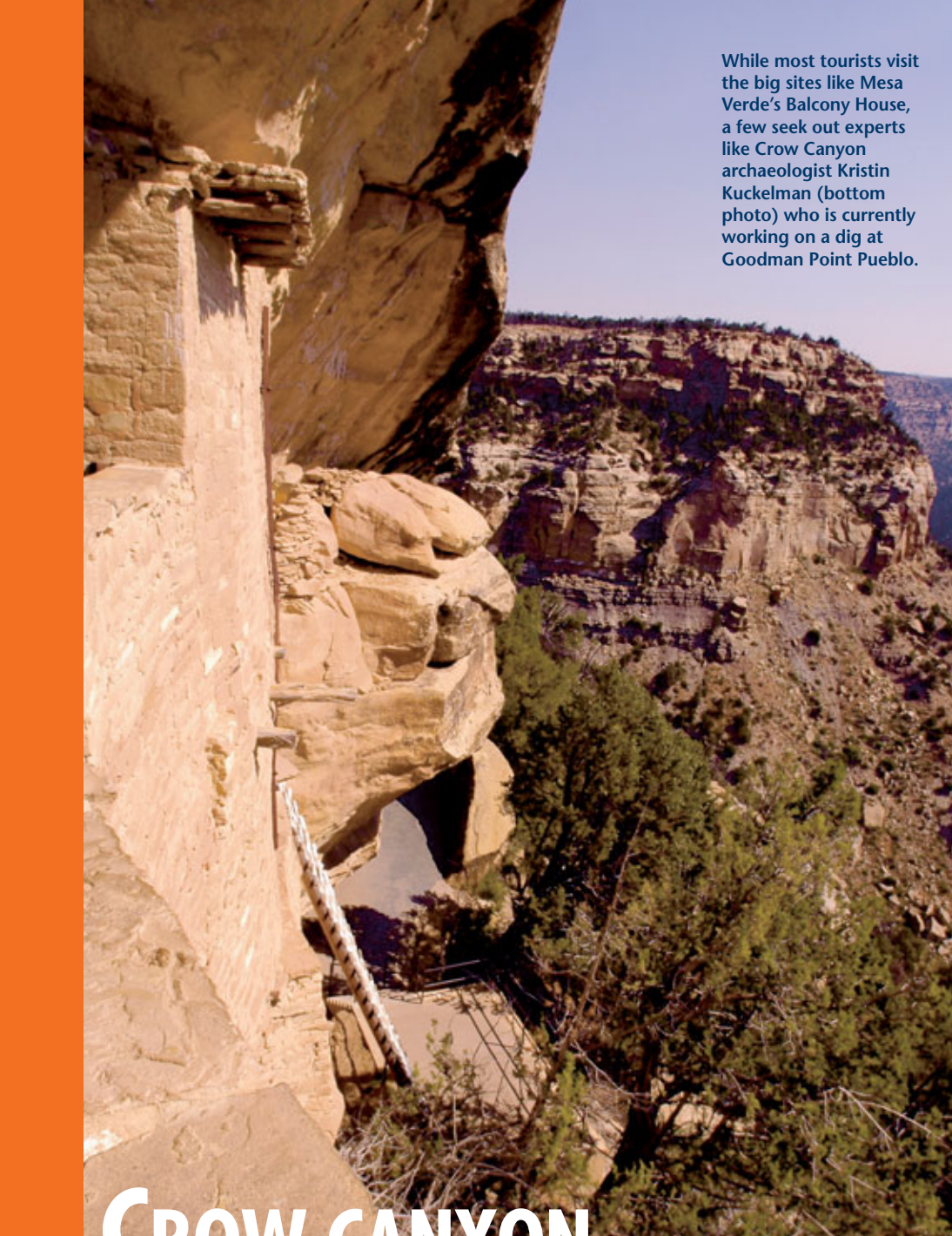
Ghost of the



towns Anasazi



WSU assistant professor Andrew Duff (with hat) urges his students to proceed carefully as they uncover the floor of a kiva.



While most tourists visit the big sites like Mesa Verde's Balcony House, a few seek out experts like Crow Canyon archaeologist Kristin Kuckelman (bottom photo) who is currently working on a dig at Goodman Point Pueblo.

a freshwater spring. The group comes to see the juniper-covered site in a new way—home to a large, active community. There was a great kiva that could have held the whole town, at least 100 smaller kivas, plazas, more than a dozen room blocks, multiple towers, and a wall that surrounded it all.

The work underway might uncover how many people lived there at its peak and how the community affected the local ecology, says the archaeologist. It might also help explain why the site was suddenly abandoned in the 1300s.

Back in Pullman, Washington State University professor Tim Kohler is using findings like Kuckelman's to check his computer-generated data. Supporting his theory that violence may have been an issue in the abandonment in that area, four weapon-type axes have been found on the site so far.

This is Crow Canyon Archaeological Center at its best—tying local fieldwork with outside research, bringing experts from diverse places and backgrounds together, building on an overall view of the Mesa Verde region, and through it all, including the public.

In the 1980s Crow Canyon was a cluster of tents and state-surplus trailers on a hillside a few miles west of Cortez. Today, thanks to the guidance of Lipe and a group of trustees, it's a 170-acre multi-building campus with a lodge, cabins, classrooms, laboratory, and a mission of educating the public about the practice and values of archaeology.

The center has ties with area Native American communities, recognizing

CROW CANYON

by Hannelore Sudermann

While hundreds of people line up in the hot sun at the Mesa Verde visitor center for a turn on a guided tour through the much-visited cliff dwellings at the park, a much smaller group gets an intimate and up-close view of archaeology at work at a site called the Goodman Point Pueblo, a few miles west of Cortez, Colorado.

Wandering down a steep hillside trail to a spot where a woman is scraping down a square pit, they stop to see what she is doing. Dressed in a long-sleeve shirt and a rough-looking hat, project archaeologist Kristin Kuckelman quickly

drops her trowel and stands to meet the group. She pulls her findings from a small paper sack, fingers a sherd from a black-on-white pottery bowl, and then points out a turkey bone. The people pull in tight around her. "That's a lot of stuff to come out of a pit that we had thought was finished," she says.

As she turns and heads up a narrow trail, she says that in fact they are on the edge of a housing complex close to a thousand years old. Then she gestures all around her, explaining that they are in the middle of a large village of at least 500 people that had been built around



their voice in the region's archaeology projects. The organization also provides researchers with a place to work together, instead of competing for sites and grants. Today most archaeological work in the United States is driven by development and funded for a specific timeline and location. Crow Canyon is an ongoing collaboration with the goal of developing a big picture for the region.

"This is a team approach, where the people in the field, the people in the lab, and this whole cadre of associated researchers are sharing information and are working toward common goals," says the center's president, Ricky Lightfoot, who got his doctorate in anthropology from WSU in 1992.

It's July in a basement lab at the Crow Canyon center, and Sarah Cole, a WSU graduate student, checks through the materials from Kuckelman's digs. As a research intern, she is spending the summer processing materials found at area sites, doing lab assessment for experts interested in things like types of pottery, which offer information about trade and cultural influences, and fire-pit remains, which show what food was available to the community.

"It's just amazing the people that work here," says Cole, eagerly peering into the next paper sack. For her master's thesis, she'll be able to draw on materials from a number of Crow Canyon researchers, including Kohler. Looking at the same period he does in his village project, she's studying



"This is a team approach, where the people in the field, the people in the lab...are sharing information and are working toward common goals."

—Ricky Lightfoot ('92 Ph.D.), President,
Crow Canyon Archaeological Center

social and political instability in the area.

Cole is just one of hundreds of students and volunteers who come to Crow Canyon each year for an informed, up-close look at archaeology, says Lightfoot.

The center caters to all ages. Grade-school children can try what Lightfoot calls "all sorts of dirty, hands-on activities." Middle-school and high-school students get to join the experts in the field, as do members of the community and visiting volunteers.

"People from all over the country are coming here to learn about archaeology," says Lightfoot. "And the more the public understands the good archaeology can do, the better off we'll all be." ■

MORE ABOUT CROW CANYON

Whether it's a one-day visit or a week-long seminar, Crow Canyon has a variety of summer programs. For more information, call the center at 1-800-422-8975, or visit the Web site at www.crowcanyon.org.



the groundwork for understanding the early Anasazi communities.


Because of Lipe and the Dolores project, WSU left its mark on the Southwest. Lipe had recruited his colleagues, tapping Tim Kohler, a junior professor who had limited experience in the region, but brought expertise in quantitative methods and ecology. Today, Kohler uses computers to track and predict how and why communities move. His major focus is now on the Southwest at the time of the Anasazi.

Lipe also drew in students who would eventually become influential archaeologists in the region, among them Ricky Lightfoot '92, now president of the Crow Canyon Archaeological Center, Sarah Schlanger '85, who today works for the New Mexico Bureau of Land Management, and Eric Blinman '88, assistant director of the Office of Archaeological Studies at the Museum of New Mexico.

"The project was such a major formative part of our early careers," says Lightfoot. "Also, you couldn't pick another spot in the United States where there is as much archaeology going on as there is in the Four Corners area."

A few years later, Lipe helped develop the Crow Canyon Archaeological Center, a private, nonprofit organization near Cortez, Colorado, that became not only a resource for scholars, but also a place for the public to learn Anasazi history and participate in fieldwork. He served as the center's director of research from 1985 until 1993, splitting his time between Colorado and Washington.

Lipe also built a legacy of conservation archaeology. Over his long career, he has encouraged researchers to approach their fieldwork with minimal disruption to a site. While the practice at the time of Dolores was to fully dig an area, Lipe argued that excavators should stop digging once they had enough of a sample to answer their research questions, thus leaving portions of the site untouched for future archaeologists.



Using a range of tools from the meager trowel to the computer, pieces of the mysterious history of this ancient civilization.

The Dolores project was an exciting adventure, says Blinman, and the Mesa Verde region proved to be one of the best training grounds for future archaeologists, no matter where they ended up.

A LEGACY OF ARCHAEOLOGY

No one better exemplifies Blinman's observation than legendary archaeologist Alfred V. Kidder. A century ago he responded to an advertisement in the *Harvard Crimson* for students to photograph and note sites in southwestern Colorado. The future world-renowned archaeologist spent a summer climbing through ancient ruins and was hooked. His professors discouraged his interest in the Southwest, saying nothing new remained to be discovered. But Kidder knew better.

The early explorers, though they had cleaned the sites of hand-painted pottery and made note of hundreds of villages, hadn't begun to discover the breadth of this civilization. Kidder pursued his archaeology doctorate at Harvard, and

LEFT: WSU graduate student Alissa Nauman (dark blue top) supervises the undergraduate students working on portions of the Cox Ranch dig in New Mexico.

BELOW: Kerry Finnan, a WSU senior in anthropology, screens excavated material for artifacts.



they're eagerly pursuing their

then pushed for more work in the Southwest. Guiding, collecting, and protecting, he set the standard for field methods for archaeologists the world over.

Hundreds have followed in Kidder's footsteps, including WSU's Lipe, Kohler, and Andrew Duff. Using a range of tools from the meager trowel to the computer, they're eagerly pursuing their pieces of the mysterious history of this ancient civilization.

Anasazi farmers occupied the Mesa Verde region for more than 2,000 years. And many ideas have been argued about how the culture lived and why it vanished.

Some Native American tribes claim them as their ancestors. Archaeologists show evidence that they are among the predecessors of the modern-day Pueblo people of Arizona and New Mexico.

But the biggest mystery is why, in the late A.D. 1200s, they suddenly left large areas of Utah, Colorado, Arizona, and New Mexico, abandoning fields, towns, and territories in the space of one generation.

Until recently, the general consensus was that a great drought drove them away. But that theory changed in 1990, when WSU graduate student Carla Van West presented a paper arguing that in spite of weather changes, the area could have produced enough food to sustain communities. The idea sent a shock through the field, but it got people past the "one big drought idea" and sparked thinking about other possibilities, says Kohler, her major professor.

Another hypothesis is that violence caused the departure. Attacks from nomadic tribes, like the ancestors of the Utes and the Navajos, might have driven the Anasazi away. But could small bands of hunters and gatherers really have threatened established farmers in large settlements? Maybe the communities fought one another. While some people see the cliff dwellings as architecture in harmony

with nature, others believe they were fortresses carefully hidden beneath the hills, with treacherous footpaths for access making them nearly impossible for an enemy to reach. Probably the best evidence that warfare and violence affected at least some Anasazi communities in the 1200s comes from excavations at Castle Rock Pueblo, directed by Ricky Lightfoot and Kristin Kuckelman in the 1990s. There they found that a small village of perhaps 75 people had been massacred in the late 1200s, not long before the depopulation of the region.

Other researchers are looking at whether a new religious system came into place, causing people to move to a new spiritual center. They are also considering whether dense population and aggressive farming practices wiped out the natural resources.

"People have been working in the Southwest for a hundred years. You'd think there aren't any surprises left," says Kohler. "But there are."

THE EDGE

The last few weeks of digging season in mid-July, before the summer rains drench the remote open mesa south of Gallup, are the most exciting. Students



TOP: Aaron Fuller '05 (left) tells classmate Jarod Stone (center) and grad student Aaron Wright about his day on the dig.

ABOVE: Screening for artifacts produces some treasures: ancient pottery, a stone chip, a worked pottery sherd that may have been used as a gaming piece, a bone probably from a rabbit, and a corn cob.

working at the Cox Ranch Pueblo with archaeologist Andrew Duff have taken more than a month to excavate down two meters from ground level to the floor of a large round meeting room, while another student in a pit a few feet away has found carvings on the lower stones of a wall. Two women excavating nearby have discovered a beautiful mortar and pestle.

The village doesn't much look like the majestic cliff dwellings at Mesa Verde

Duff theorizes that Zuñi Salt Lake was a special site for the community that lived in the Cox Ranch village from A.D. 1050 to 1150 and that the people likely traded salt for other goods with neighboring communities.



While supervising students, Andrew Duff carefully drafts a site plan for his own use and for future archaeologists who want to learn from the Cox Ranch dig.



eight hours to the north. But there is a connection.

Here Duff, a 40-year-old assistant professor at WSU, has found an outlying settlement where the Anasazi met up with another culture in the latter days of the civilization. The site is near the Zuñi reservation and just a few miles from a small salt lake that is sacred to the tribe. Duff theorizes that Zuñi Salt Lake was also a special site for the community in the Cox Ranch area from A.D. 1050 to 1150.

Remnants of clay pots are everywhere. Sherds of red, black, white, and brown scatter through the soft earth. But Duff and his students leave them in the middens outside the dig, and focus instead on the rubble remains of a large community. Time and weather have collapsed the walls and roofs. The damage was worsened by a backhoe a few decades ago that Duff believes was brought in by someone hunting for pots. The looter probably didn't find any intact artifacts where he was digging, says Duff, but he did harm the site.

One windy morning, Duff hikes the quarter mile from the rocky road through brush to check on his field school, an assemblage of about 20 students who have already lifted the blue tarps off their excavation areas. He drops to his hands and knees and peers into a long, narrow hole that runs along the back wall of a room. Duff cautions the students to trade their whisk brooms for paint brushes as they uncover the floor. "It's hard to know what to expect down there," he says, adding that artifacts in the floor area will explain the last use of a room before it was abandoned. His advice pays off. About a half hour later, the students come across an almost intact pitcher.

It's not an easy summer job. It's hot, it's dry, it's hard labor, as sunburns and bruises testify. Sleeping in tents and washing their clothes in buckets, most of them are disconnected from their families and friends for the first time in their lives.

"During the week, we work them to the bone and send them to bed early," says Duff. At the start Duff assesses their skills handling shovels and trowels. If they are careful and precise, they win prime spots on delicate portions of the dig. If not, there is still plenty to do, especially when it comes to moving fill—the years of rocks and soil that have fallen into the room blocks. "Some days it's fun, some days you get really tired," says WSU student Jarod Stone, who seems always ready to move heavy buckets of rock and earth.

At the end of the day, the students load up their clipboards, buckets, and backpacks and board the white vans back to the camp. There they converge on a shed where trays of artifacts wait to be washed clean of dirt and ash. They work shoulder to shoulder and, under the watch of graduate student Jen Mueller, slosh and scrub pieces of stone and pottery picked out of the excavations.

"You could say we're over-educated garbage collectors," says one student to laughter. "Naw," says another, dipping

into his archaeology terminology. "I'd say we're a subset of garbage collectors."

VIRTUAL VILLAGES

A large chunk of the Southwest can be found in Tim Kohler's College Hall laboratory in Pullman. It's reflected on computer screens and stored in databases. And it grows by the day, as Kohler and his students busily collect centuries of information. Environment, rainfall, geography, deer populations, plants and trees, mortality rates, and signs of human occupation all factor into a virtual Anasazi world.

Kohler wants to know why the people built their villages where and when they did. He's looking at 1,800 square miles northwest of Mesa Verde, land known to have supported a high concentration of villages. Breaking the area down into 200-square-meter cells, Kohler and his students input data for households built near water, good farmland, and wood for fuel. The program even considers the degradation of the soil after years of crops, the deforestation of an area for firewood, and trade and gift-giving practices.

Kohler conducts his work in close connection with the real-life archaeology at Crow Canyon. "They're our reality check," he says. "We build our models and play off our models against their findings."

Agent-based modeling is not a big niche in archaeology—it never has been, says Kohler. But an ever-increasing amount of data and improved technology allow him and his graduate students to focus on very specific areas, with the idea of gaining an understanding of how communities developed.

His collaboration with another archaeologist and a computer science expert was featured in a *Scientific American* magazine article last summer. Titled "Simulating Ancient Societies," the piece suggests that something besides, or in addition to, environmental issues caused the Anasazi to leave.

The beauty of focusing on the Southwest is that there is so much data avail-



Tim Kohler's computers collect data about the ancient Anasazi world and predict how stresses like population and climate change might have affected the communities.

able, both archaeological and environmental, to factor into and check against the computer simulations, says Kohler. Though the simulations seem to mirror the actual population location and growth up to the 1200s, it doesn't reflect the dramatic depopulation late in that century. There's more to be done.

"Work like this is really cumulative," says Kohler. His research builds on the research of others going back more than 100 years. "This gives us a way to put the empirical findings into context," he says. In the long run, "I think we'll debunk some theories."

Recognizing the value in simulating the lives and environments of civilizations, the National Science Foundation has provided Kohler and his colleagues with a \$1 million grant to support the archaeology and computer work.

"The Southwest [because it contains so much information] is an area in which ideas can be tested," says Kohler. "It's not as easy elsewhere in the archaeological world."

Too many people resort to describing the story of the Anasazi as a great mystery, says Lipe. But archaeologists, including those at WSU, have learned a lot about the past in this region, and much of it is more interesting and surprising than fiction. ■

by Hannelore Sudermann • photography by Robert Hubner

BRIDGING TWO



*A small
school district
radically retools
to serve its
Hispanic students.*

CULTURES



ON HER FIRST DAY OF SCHOOL, Michelle Lopez carefully fills her new backpack with five pencils in the front pocket, pens in another, and post-its and a rainbow of highlighters in the rest. Oh, and all 20 pounds of her books.

Once on campus, she nervously opens and folds her campus map and glances around to get her bearings. Here in Pullman her freshman class holds 2,800 students, about 800 more people than her entire hometown of Bridgeport, Washington. But she still manages a show of poise as she makes her way through the crowded halls of the Smith Center for Undergraduate Education.

Petite, 18, with shoulder-length brown hair and wide grey-green eyes, she wears jeans, white tennis shoes, and a pink blouse. Michelle is not a typical student. She was valedictorian of her high school. Here at Washington State



Michelle Lopez



In 2004, the Bridgeport elementary school won a National Title 1 Distinguished School Award from the U.S. Department of Education for its gains in student achievement.

University she is a Regents Scholar. Because of her academic achievements in high school a portion of her tuition is paid for two years. And she is the first person in her family of migrant workers to enroll in a four-year American university.

ABOVE: Katherine Myers '73 reads to her first-graders in an activity designed to expose them to rhyming. The district focuses on reading and writing English during the first years of school, skills that will serve students through high school, where many will find themselves in advanced-placement courses.

But Michelle Lopez is not the only reason the Bridgeport School District should be proud.

In the late 1990s the district suddenly went from being mostly white to mostly migrant Hispanic, as a growing tree-fruit industry attracted

new workers. Then there were some bad years of low test scores and rocketing dropout rates.

But the district was quick to recover. Instead of lowering expectations for students who might be struggling with English, the teachers adjusted their efforts to provide them with basic skills to carry them into more complicated courses like honors English and high-level science, classes that helped Lopez get into WSU with a scholarship.

For all this and more, the district has won national recognition. In 2004, the elementary school won a National Title 1 Distinguished School Award from the U.S. Department of Education for

its gains in student achievement. That same year, the elementary was one of six schools to earn the Washington State Academic Achievement Award. It has also earned a state diversity award. Last year the high school won its own federal Distinguished School Award for student gains in math and reading over the past two years. All this happened under the leadership of superintendent Gene Schmidt, a WSU graduate student.

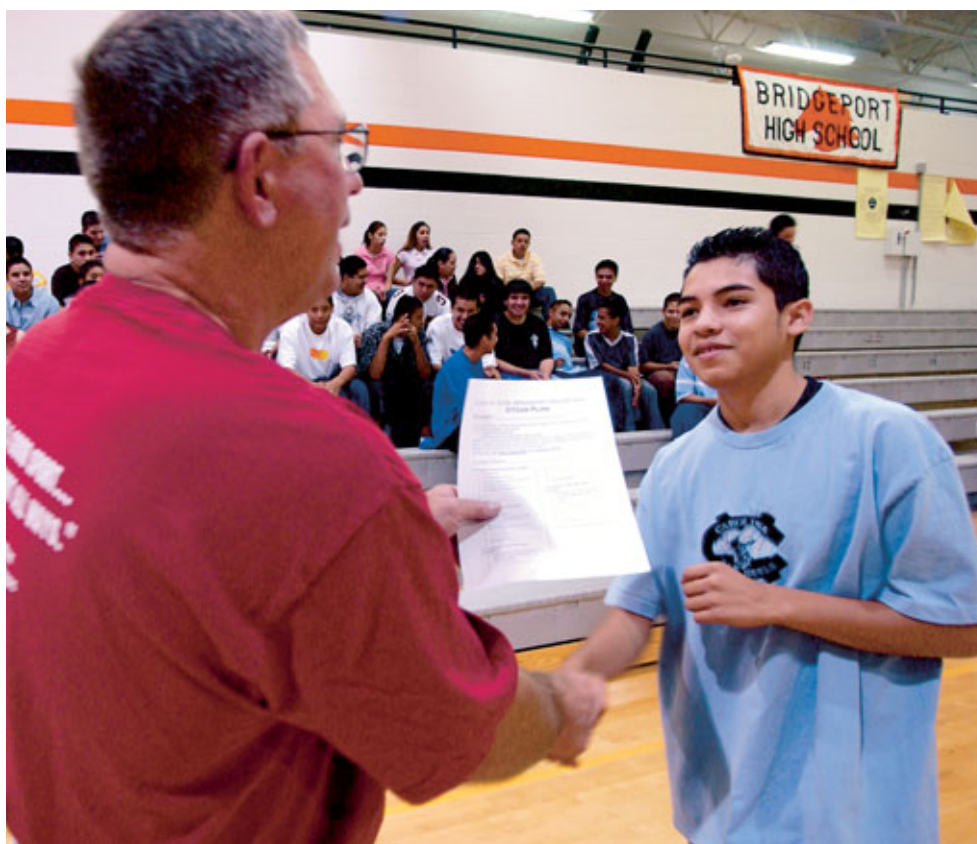
JUST A COUPLE OF WEEKS after Michelle's first day of college, more than 60 freshmen file into the gymnasium at Bridgeport High School.

*"Ladies and gentlemen,"
Pointer calls to the
empty bleachers
behind him,
"welcome to the
95th graduating class
of Bridgeport
High School."*

"You're all geckos," says principal Steve Pointer '88, who is waiting for them in a crisp white shirt, tie, and black pants. They're going to cling to the walls of the high school for the next "three years and nine months," and then they're going to graduate, he says.

They try to look bored, even when he explains that the statistics are against them, that in recent history 20 to 30 percent of students who began ninth grade at Bridgeport did not finish high school. "That's one in three of you," he says. "That's not something we want." They frown. "We're here today to show you what it feels like to graduate."

Someone cues up *Pomp and Circumstance*, and after scooting to one end of the gym, Pointer and his vice principal start a stately march across the floor;



TOP: Principal Steve Pointer '88 leads the new freshmen in a walk across the gym in a practice graduation ceremony held the first week of school.

ABOVE: In lieu of a diploma, students practicing commencement get a handshake and a list of graduation requirements from a school board member.



**Superintendent
Gene Schmidt**

right-together, left-together. Then they wobble. Just a little. And the students erupt in laughter.

Once it's their turn, the girls move self-consciously across the blond wood basketball court. Then the football players, some smaller than the girls, follow in their jerseys, off-rhythm and uncoordinated, half smiles on their faces.

"Ladies and gentlemen," Pointer calls to the empty bleachers behind him, "welcome to the 95th graduating class of Bridgeport High School. The

graduating class of 2009 are all going to college." He turns to the students now arranged on the opposite bleachers. "Please stand, if you are all going to further your education past high school." They do. Every one of them.

While people have lived in Bridgeport for more than 130 years, it has always been a somewhat fragile town.

In the 1870s, the site was home to a Chinese community that had come to

find gold in the Columbia River. The Chinese settlers gave way to the Second United States Infantry, which later determined the site wasn't ideal and moved west to Chelan and then east to establish Fort Spokane. The soldiers were

The schools are really the heart of the town, and their success or failure will ultimately affect the community.

followed by settlers who came first to mine and then to farm.

Then a town was built with the support of East Coast investors. A flour mill went up, a hotel, and houses, and work was started on a school. But in the early 1900s, the benefactors ran dry, and development was halted. It was just the first of many economic slumps for the speck of a community.

The local farmers realized the spot along the river was ideal for growing fruit trees. They irrigated with water from the Columbia and Foster Creek. Their fruit was shipped downriver on steamboats, and money came back through the bank.

The population grew to 500 and stayed that way until 1949, when President Truman authorized the first \$5 million to pay for a dam across the Columbia just north of town. The first major construction drew hundreds of new residents—builders, engineers, dam workers—creating a boom for Bridgeport that was repeated in the 1970s with a U.S. Army Corps of Engineers expansion of what had been named the Chief Joseph Dam.

But those were the good years. Bridgeport was never a wealthy community, and when the money leaves, there's little to fall back on. With apple prices low and no new dam projects in sight, the median household income now lingers around \$25,500. Thirty percent of the population and more than 40 percent of the children live below the poverty line. According to the U.S. Census, of the 2,060 residents of Bridgeport,

more than half today are Hispanic.

The newest children in the community come with migrant families either directly from Mexico or from California through the Wenatchee area, according to the Migrant Student Data and Recruitment Office in Sunnyside, Washington. Poverty is just one hurdle. They also struggle with language and with fitting school into a migrant lifestyle.

Superintendent Gene Schmidt thinks about that constantly. He frets about how his students are living, eating, staying healthy—how their parents view the school, how the community views the families.

He tries to get a head start on the day by being one of the first on campus. But at seven one morning last fall, he was preceded by a third-grader who had been dropped off by a parent heading to work and had already crisscrossed the parking lot and playground twice, hungry for the companionship of classmates.

Schmidt, buttoned up in his half-sleeve shirt and earnest brown tie, noted the boy and then headed for his office. As children filtered in and the din on the playground reached a perfect pandemonium pitch, he sped back to his car with a teacher in tow. Schmidt fights on the front lines of truancy, trying to bring in as many of the community's children as he can, even if it means going out from time to time and rounding them up himself. Some families are just so wrapped up in getting by, they don't have time to realize the value of keeping their children in school, he says.

The district learned its lesson in the late 1990s, when prices for agriculture commodities plummeted and the dropout rate increased to 58 percent, as students left school to find work in nearby orchards and packing houses to help support their families.

Schmidt, who hired on at Bridgeport seven years ago, led the effort to bring the students back, promis-

ing their families that they would be getting skills that would serve them beyond fruit work. For a small district on a meager budget, that wasn't an easy promise to keep. At its lowest point in the '90s, the whole district owned only two computers.

But then the district started writing grant proposals, at least 10 a month. The philosophy: no grant was too small or too large to attempt.

Today there are computers at the fingertips of every high-school student. No one leaves Nancy Fisher's '78 high-school business class without computer training. Many of the kids are building and managing Web pages for themselves and others in town.

Looking to districts in California and Texas that have been dealing with similar issues for decades, Schmidt, Pointer,

Students in Nancy Fisher's class learn to make spreadsheets and design Web pages, skills that can land them jobs after high school.



and others in the district reoriented the schools to better serve the changing student population. Bridgeport started offering elementary programs in Spanish during the summer. Then the district opened a day-long kindergarten program with teachers who speak both English and Spanish. The tots leave versed in the alphabet and able to count to 20.

Free breakfasts and lunches provide another incentive to come to school. The menu has been changed to include rice and beans, adjusting for the palate of the student body. The school has also hired America Reyes, an exchange teacher from Mexico who works alongside the local teachers in the high school.

AND THEN THERE'S the basic business of teachers. First-grade teacher Katherine Myers '73 draws out her sentences like slow syrup, sweet and rich. Her charges are rapt as she points to words in a story book.

Though she's reading, she's also watching, noting. Manuel is having trouble sitting still. Instead of chiding him, she looks to a neighbor. "Kevin, I like they way you're paying attention. You're going to know what to do," she says. Manuel and a few others get the hint. Maybe she's just following the first of the class rules posted on the dry-erase board: "Be nice to everyone."

This reading time is crucial. Myers's first-graders spend their mornings alternating between clusters of knee-high desks and the reading corner, where they settle into the soft carpet around her feet. Their goal this school year is simple: learn to read. It is the foundation for the next 12 years of education.

The effort is paying off. Last school year, 62 percent of the fourth-grade students were reading at the state standard, up from 48 percent just two years earlier and 20 percent in 1998.

It isn't just the students who are learning. In spite of his busy schedule Schmidt has managed to find time to pursue a doctoral degree in education at WSU. "WSU's task is to help us un-

derstand the theory," he says. "We take that theory and put it into practice here in the district."

"One of the things that makes this community neat is a willingness to try new things, sometimes radically different new things," he says. The district

has found creative ways to get and use grants, finding funding for projects on the school grounds, like building baseball dugouts. The work provided good summer jobs for the students and at the same time invested them with a sense of ownership of the schools, which in turn cut down on vandalism and truancy, notes Schmidt. The superintendent is especially proud of a USDA fruit and vegetable grant, which brought the school close to \$30,000 for the purpose of providing students with fresh fruits and vegetables during afternoon recess every day.

In an effort to rekindle town pride, teachers and students have reestablished the annual Bridgeport Daze to celebrate the town's history, taking up where local volunteers left off. And to ensure that it's attended, they've scheduled it on graduation weekend.

The schools are really the heart of the town, and their success or failure will ultimately affect the community, says Schmidt, who's also president of the chamber of commerce.

IF THE NATIONAL AWARDS and the improved test scores weren't enough, Michelle Lopez is a sign that the district is doing things right—raising expectations, pushing students to work harder and take risks.

When Michelle was five, her family



The district urges all students to take part in extracurricular activities like soccer. Besides teaching teamwork and healthy activity, it looks good on a college application and draws families to campus.

moved from California to an area northeast of Wenatchee. There they found a small town tucked alongside the Columbia River just beneath the Chief Joseph Dam, one with a school district, just a few businesses, and an affordable quality of life. "And we stayed," says her mother, Gina Cruz. "Bridgeport was a calm town. It seemed like a good place to raise our children."

Twelve years later, the family made another big move several weeks before Michelle started school, trading an address on Fisk Avenue in Bridgeport for a small house on Fisk Street in Pullman. Gina recognized an opportunity in Pullman for Michelle, as well as for herself and her youngest daughter, April. She's looking for work, planning to take classes, and seeking ways to expand on her teaching and bookkeeping credentials from Mexico and her U.S. preschool teaching certification. Michelle's opportunity at WSU has become an opportunity for everyone.

With a healthy class load of biology, psychology, theater, math, and world civilization, she has started down the path toward a psychology major. "I want to do counseling or something like it," she says.

Her family and friends back home support Michelle and her choices, says her mother. "She's such a hard worker." Then in four simple words, Gina summarizes the philosophy the school district has applied to every one of its students so far: "She deserves this opportunity." ■



THE

Secrets of Sweet Oblivion

by Cherie Winner • photography by Robert Hubner

*All men whilst they
are awake are in
one common world:
but each of them,
when he is asleep,
is in a world of
his own.*

—Plutarch

FOR MOST OF US, sleep is a time to rest and a chance to dream. For biochemist James Krueger, sleep offers a window into how the brain is organized, and how its trillions of cells coordinate their actions to create a perceiving, reflecting, inventing human mind.

Krueger is the founding member of a research group that has developed at Washington State University over the past 15 years. With established researchers Krueger, Lynn Churchill, and Gregory Belenky, and up-and-comers Hans Van Dongen and David Rector, the WSU sleep team is one of a few nationwide—including groups at Harvard, Stanford, and the University of Pennsylvania—that focus on fundamental questions: What makes us sleep? Why do we do it? What are the effects of not getting enough sleep? And the most basic of all: What exactly happens in the brain when we sleep?

A SLEEP SWITCH?

Some researchers think there's a control center somewhere in the brain that emits electrical signals or chemicals that cause the rest of the brain to switch into sleep mode.

This sort of "top-down" model, of sleep being imposed on us, goes back centuries. An ancient Roman poet described sleep as a winged god that "steals o'er the greedy cares of men, and stoops and beckons from the sky, shrouding a toilsome life once more in sweet oblivion."

It's a reasonable idea, but James Krueger doesn't buy it.

Tall and genial, with the easy manner of a natu-

ral storyteller, Krueger says anyone trying to identify a single sleep control center sooner or later hits a logical snag. Say you do find a control center; then you have to ask, what controls that?

If sleep isn't imposed by some control center, what else could cause it? About 20 years ago sleep scientists began to find hints. A Russian group reported that dolphins only sleep in one half of their brain at a time. Though surprising at first, this made sense. Dolphins need to swim to the surface in order to breathe. If a dolphin ever slept in both halves of its brain at once, it would drown.

Investigators then found that sleep isn't always an all-or-nothing affair in our brains, either. Working one side of the brain harder, by exercising one side of the body, or one ear or one eye, makes the worked hemisphere undergo more and deeper sleep than the idle side.

In 1993 Krueger and visiting colleague Ferenc Obal, who died in 2004, proposed that sleep starts in individual groups of neurons called neuronal assemblies, or cortical columns. Each group contains between 10,000 and 100,000 neurons, or nerve cells, that are highly interconnected and

James Krueger, a pioneer in the biochemistry of sleep, enjoys a rare moment of rest.

that work together to perform a specific function. Krueger and Obal suggested that after a group is used a lot, it shifts into a sleep state. When enough groups in an animal's brain are in sleep state, the animal goes to sleep.

"It's a bottom-up process," says Krueger, a process that doesn't require central control. He compares it to the way ant colonies perform complex, coordinated tasks. "Colonies have behav-

the immune system as well as the brain. Krueger's lab is investigating several of them, notably one called tumor necrosis factor (TNF). It's unsettling to learn that a chemical named for its ability to kill things permeates my brain every night, but Krueger says the name is simply a holdover from its initial discovery by cancer researchers who found that it cleared up malignant skin lesions on mice overnight. "It's a miracle drug,

if you're a mouse with skin cancer," says Krueger. Unfortunately, it doesn't work that way in humans—but Krueger has shown that it does appear in our blood and brain just prior to and during sleep.

"There's no other substance anywhere, of any sort, where you can correlate circulating levels with sleepiness," says

Krueger. Not only that, but injecting TNF enhances sleepiness, and Hitoshi Yoshida, a visiting scientist from Japan, has found that injecting TNF into one hemisphere of a rat brain causes that hemisphere to go into a deeper sleep than the other hemisphere.

Still, Krueger has no illusions that TNF is the sleep factor. "I don't even know if phrasing the question in the sense of one being most important, or more important than another, is even a correct way to look at it," he says.

"For whatever reason, people like to have a single chemical responsible for things. Drug business drives that in part, but I think it's also somehow inherent in our minds, that we want a single gene, a single enzyme, a single neurotransmitter responsible for disease A, B, C, or D. But it ain't so.

"To think that we understand how this molecular network works is naïve. We have no idea how it works."

NO SNOOZE, YOU LOSE

Shifting focus from molecules to people brings a different kind of answer to the question of why we sleep: we just don't function well if we don't.

The exact amount we need changes

through our lifetime—babies sleep a lot more, and old folks tend to sleep less—but the standard advice to get eight hours of sleep a night is right for most adults. Some oft-heard advice about naps, though, isn't right—for instance, that a short daytime nap will make up for a short night's sleep.

"That's baloney," says Greg Belenky. "A five-minute snooze in a meeting takes the edge off the sleepiness, but it doesn't improve your performance." If you only slept six hours in the past 24, you'll need two hours of nap time to top yourself off.

So if you're going to rely on naps to stay rested, he says, do it right. "Nap early, nap often."

He should know. Belenky studied the effects of sleep deprivation for the Army for more than two decades. He came to WSU Spokane in 2004 from the Walter Reed Army Institute of Research, where he directed the Division of Neuroscience.

Other than using military style for clock times ("See you at ten-hundred hours"), Belenky seems more like a cheerful academic than a career Army officer. He laces his conversation with wordplay and movie references. *The Treasure of the Sierra Madre* and *Night Shift* come up in the first 15 minutes of our talk.

Belenky says the Army's interest in sleep science centers on one thing: performance. Will a soldier in the field make the right decision and be able to follow through on it when called on to do so?

His research showed that you don't need to lose an entire night's sleep to be impaired. Even modest sleep deprivation over a period of days—dropping from eight hours to seven hours of sleep per night—significantly hinders mental performance, reaction time, and judgment.

Belenky studies sleep and performance both in the field and in the lab. In field studies, volunteers wear a wrist-watch-like device called an actigraph that records when the wearer is asleep

How much sleep you need each night depends on your genes, not your experience. If you need eight hours of sleep, you can't train yourself to get by with less—and still perform well the next day.

ioral properties that are whole-colony properties, and yet there's no individual ant directing that.

"It's an emergent property of the whole colony."

Likewise, he and Obal theorized that sleep emerges from the activity of neuronal groups. No control center, no switch, just a sleep-wake shift depending on what the individual groups are doing.

It took Krueger a while to reach that view. He started working on the chemicals involved in sleep in 1974. Another investigator had found that injecting fluid from the nervous system of a sleeping animal into another animal made the recipient sleepy. Krueger set out to purify the substance that was causing the sleepiness.

"We were trying to isolate the sleep-promoting 'factor S,'" he says. "We thought it was a single compound. In our dreams we had ideas that we'd have the sleep hormone."

Now he chuckles at that optimism. The current list of chemicals thought to be involved in sleep regulation numbers well over a hundred.

Most belong to a class of small proteins called cytokines, which function in



Gregory Belenky, M.D. and Hans Van Dongen of the Sleep Research Institute at WSU Spokane use handheld devices to check the sleep habits and reaction times of their sleep study volunteers.

(motionless) and when he's awake. The actigraph allows the wearer, or a supervisor, to keep track of how much sleep the individual has had. In the lab, Belenky restricts the sleep of volunteers by different amounts for periods of up to two weeks. In both kinds of tests, he measures the subjects' performance on a psychomotor vigilance task test, or PVT.

He hands me a Palm Pilot to let me try his latest version of the PVT. A bull's eye image appears on the screen. I push a response button. The screen shows my reaction time—0.27 second. This goes on for about a minute, the target image showing up at odd intervals. My average score at the end is 0.302 second, a bit

slower than a well-rested person with PVT experience.

I note that three of my scores were much higher than the others—over 0.4 second—and say it felt like they came after a moment of inattention.

"Exactly!" Belenky says. He notes that Hans Van Dongen has shown that the number of "PVT lapses"—response times of half a second or longer—shoots up after just two nights of six hours' time in bed.

Half a second doesn't sound like much, but if you're driving 75 miles per hour, in half a second you'll travel 55 feet—far enough to cross two lanes of traffic and the median.

Add to that the finding that up to one-third of us are chronically sleep deprived, and you get an even scarier picture. It may not matter if *you* got a full quota of sleep this week. Odds are the driver behind you, the one beside you, or the one in the oncoming lane, didn't.

"For years the Federal Motor Carrier Safety Administration said, 'Oh, only about 5 percent of accidents are fatigue-related'" says Belenky, "—but another 35 percent are from inattention!"

In fact, sleep shortage played a role, often the primary role, in almost every accidental disaster in recent memory—the meltdown at Chernobyl and the

wreck of the *Exxon Valdez*, for example.

Belenky says people who do well with substantially less than eight hours of sleep per night are rare. And a person's own assessment of his or her fitness "is next to useless," he says. "Some people perform poorly and think they're doing great, while others perform fine and think they're doing poorly."

He says most tales of legendary figures who "never" sleep can't be believed. General Maxwell Thurman, who helped rebuild the Army after the Vietnam era, "was rumored never to sleep," says Belenky.

"He was unmarried, sort of a military monk. A real fire-eater. His staff all had to be there before he got there, and only

could leave after he left, and he lived a mile from the Pentagon, and he had a driver. So basically he *could* spend every waking minute on Army business and still get seven or eight hours of sack time. To his staff it looked quite different. That's where the idea came from that the Old Man never slept. But that simply wasn't true."

Belenky and Van Dongen are getting ready to start studies of sleep and performance in the new "sleep suite" at the Spokane campus. Equipped with private sleeping rooms and a shared kitchen and living room, the sleep suite allows observers to track the brain activity, sleep cycles, and PVT performance of four live-in volunteers at a time. Also

in the works are field studies with medical residents at Spokane-area hospitals and Spokane police officers, among others.

PIECE BY PIECE

Another intriguing bit of information came out of Belenky's sleep deprivation studies: as a PVT test goes on, performance drops. Well-rested people do a bit worse after three or four minutes of the test. Sleep-

deprived people do a lot worse after just one minute. This is the "time-on-task" effect—the longer we do one thing, the more fatigued we get, and the more mistakes we make. Sleep deprivation accentuates it.

Belenky thinks the drop in performance happens because the brain cells responsible for doing the task enter a sleep-like state after they've been used a lot. That's why a person can feel tired after working for a long time on one task, but perk up by switching to a different activity that uses different sets of cells.

That fit nicely with Krueger and Obal's hypothesis. Still, direct evidence that that's how sleep happens remained elusive. Electroencephalograms (EEGs) of humans couldn't give fine enough resolution to see what specific neuronal groups were doing. Studies with animals offered more detail, but few ways of measuring performance. There was no PVT test for lab rats.

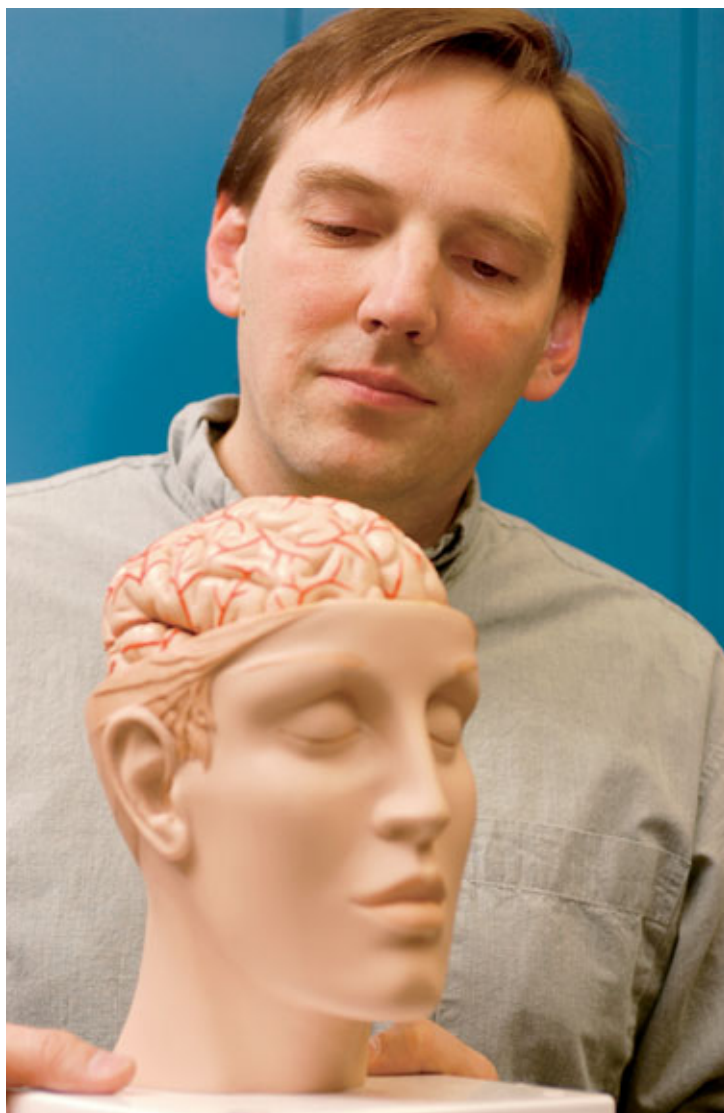
Amazingly, says neurophysiologist David Rector, there wasn't even any way of knowing whether neurons were "asleep" or "awake."

"So far the sleep community has only had one definition of sleep, and that is if you're lying down, or in some particular posture, and you're not responding to external stimuli," he says. "It's not a very useful definition"—especially if you're looking at brain cells rather than a whole animal.

In a warren of small rooms crowded with workbenches and electrical equipment, Rector combined EEGs and a standard behavioral test with new brain-mapping techniques to create a new way of asking the question.

"You should see how hard these experiments are," says Krueger. "He has to train the animals for months."

First, Rector trained lab rats to be comfortable hanging out in a hammock for a couple of hours, dozing intermittently while having a whisker twitched and brain activity recorded. The hammock was needed to keep the rats from



Neurophysiologist David Rector ponders the inner workings of the brain. According to fellow sleep researcher James Krueger, Rector "changed sleep research forever, . . . because he identified what it is that sleeps."

NEURO, MICRO, OPTO

In his ground-breaking work, David Rector has collaborators who are not just new to sleep research. They're new to any form of biology.

"The weirdest thing about this is working with stuff that's alive," says Washington State University physicist Matt McCluskey. In his own research he uses optics to explore the structural properties of crystals and semiconductors. This year he's doing a sabbatical in Rector's lab, studying how nerves transmit or reflect infrared light when they're transmitting impulses. The result, he and Rector hope, will be a portable, easy-to-use way to track human brain activity.

McCluskey's initial tests are done with nerves from lobster legs. Learning how to dissect out the stringy white nerves without mangling them required a whole new set of skills.

"Part of the challenge, which I'm finally used to, is that you're up

against a clock," says McCluskey. "The thing will die in just a few minutes. Ten, 15 minutes, the nerve just degrades.

"A semiconductor sample can wait around for weeks and weeks. You can always do it 'tomorrow.'"

Across the hall from the optics room, rats have their whiskers twitched and brain activity recorded by devices made by mechanical engineer Cill Richards. She approached Rector about a joint project because of her interest in mechanical sensors of such substances as contaminants in air and water.

"We're interested in whether we could use the rat brain as the model of a sensor," she explains. "There's a lot of background noise all the time in the environment, but animals are able to detect very small signal information on top of that background.

"How do they do that?"

She doesn't have the answer yet,

but she has provided some nifty tools for Rector's work. One is an array of 64 microelectrodes on a thin wafer about a centimeter square. Unlike most arrays used in neuroscience labs, this one contains enough electrodes in a small enough space that it can pinpoint specific groups of cells in the brain. It's also flexible, which allows the electrodes to rest gently along the inner surface of the skull rather than poking into the brain tissue. This design is less traumatic for the rat and allows Rector to precisely map areas on the surface of the brain.

Another, which turned out to be even more challenging than the electrode array, is the device that twitches the whiskers. It must be silent; if it makes noise as it twitches, any brain activity that occurs could be responding to the sound, rather than the twitch. It also must control the whisker's recoil, which can obscure signals from the electrodes.

Matthew McCluskey teases out the nerve from a lobster leg and then seals the nerve into a chamber with petroleum jelly.



SLEEPY LITTLE TOWN? NO MORE!

WALLA WALLA might have had a reputation, in years past, as a sleepy little town; but in the last two decades it has become one of the most sleep-savvy cities in the world.

It all started when native son William Dement, M.D., Ph.D. launched an ambitious effort to examine the sleep habits of every citizen of his hometown. The Walla Walla Project, as it became known, was the first—and so far only—comprehensive study of how one town's people sleep. Dement documented normal sleep patterns and the astonishing numbers of people suffering from sleep disorders. He also educated Walla Walla primary-care doctors about the crucial role of sleep in maintaining health.

Another Walla Walla native, Mark Opp ('87 Ph.D. Zool.), is the president of the Sleep Research Society—and according to James Krueger, the man responsible for Krueger coming to Washington State University. Opp did postdoctoral work in Krueger's lab at the University of Tennessee in the late 1980s and early '90s.

"We used to bike a lot together," says Krueger. "The countryside around Memphis is beautiful. But he would always complain that it wasn't as nice as Pullman. So when I saw this job in Pullman, I thought, well, it might be good biking, I'd better apply."

The Walla Walla tradition is still alive in Krueger's lab. Junior neuroscience major Lissette Jimenez is researching the possible role of growth-hormone-releasing hormone in promoting sleep. Growing up in Walla Walla, she got interested in neurobiology when she acted as translator for her Spanish-speaking parents and a neurologist treating her younger brother.

And Walla Walla itself continues to play a prominent role in sleep research. Last year Dement and colleagues at Stanford began the largest clinical trial on sleep disorders ever funded by the National Institutes of Health.

The Apnea Positive Pressure Long-Term Efficacy Study, as it is known, will test a promising treatment for apnea, a disorder in which a person stops breathing during sleep. One of the most common chronic illnesses in the nation, sleep apnea causes fatigue and can contribute to heart disease, high blood pressure, stroke, and depression. Dement and his team will be working with volunteers at five sites across the nation, including St. Mary's Medical Center in—of course—Walla Walla.



Junior Lissette Jimenez, shown here in Walla Walla's Pioneer Park, continues the city's tradition of sleep research.

SHELLEY HANNA

REM (Rapid Eye Movement) sleep gets a lot of attention in the popular press . . .

But we may not need REM sleep at all. A person deprived of REM sleep functions just fine, as long as she gets the total hours of sleep she needs each night.

curling up in a ball when they napped, which would have made the whisker work impossible.

Then, using a specially-designed electrode array, Rector mapped the area on the surface of the brain that contained the neurons connected to the whiskers. Once he found the column of cells “belonging” to a particular whisker, he twitched that whisker with a mechanical device. The size of the neuronal response told him whether the column was asleep or awake.

While the whisker was being twitched, EEGs showed when the whole animal was awake and asleep. Most of the time, the column’s state matched that of the whole animal; but sometimes, the rat was awake, but those particular cells had zoned out. The harder the cells had been required to work—the longer the whisker had been twitched—the more often the column entered the sleep state.

Rector had discovered the basic biological unit that sleeps: not the whole brain, and not individual cells, but groups of cells related by function. That was already a huge breakthrough, but Rector went even further. He taught his rats a skill. They learned to lick when a particular whisker was twitched, and to refrain from licking when a different whisker was twitched. This behavior had been used in studies with rats before, but not in conjunction with the sleep-wake assessment. It became, in essence, the world’s first PVT test for rats.

Once a rat was adept at its new skill, Rector twitched one whisker repeatedly, to “tire out” the neurons connected to it. Lo and behold, when the column went to sleep, the rat’s score on the lick test dropped—just like Belenky’s human subjects several minutes into a PVT.

Last fall, Lynn Churchill added another piece of the puzzle. She found that after a prolonged period of whisker twitching, the worked column produced

TNF, the chemical Krueger had earlier shown is related to sleepiness.

Rector had put the pieces together. Krueger and Obal were right. Different parts of the brain can be asleep at different times. When enough groups enter the sleep state, the whole animal goes to sleep. There’s no central control, no on-off switch. Sleep emerges from the individual clusters of neurons that work together on some task. As they work, they accumulate TNF and other chemicals, and eventually they tune out.

What sleep does for the neuronal groups remains an open question. Krueger & Co. have ideas about it—but that’s a story for another day.

IT’S BETTER IN A GROUP

Rector presented his whisker-twitch results at the national Sleep Research Society meetings in Denver last summer.

“He changed sleep research forever,” says Krueger. “I think David’s paper on this will probably be the single most important paper ever published in sleep research, because he identified what it is that sleeps.”

After the symposium, all the members of the team, plus Van Dongen, who was not yet at WSU, and another scientist who visits Krueger’s lab yearly, got together for a lunch that became a brainstorming session.

“That was such a treat,” says Krueger. Their discussion brought out ideas that culminated in a grant proposal, currently under review by the National Institutes of Health, to look at chronic fatigue syndrome as a disorder of the sleep-regulation system.

Krueger says that’s just one example of how

a group of people working in the same area can make headway where a lone investigator would struggle.

“Having isolated individuals working on their areas by themselves doesn’t work,” he says. “It’s so hard for them to compete nationally and internationally.” He’s especially pleased that the WSU team spans two generations of researchers.

“Our strength is in David and Hans,” says Krueger. “They’re young, and they are *the* very best. Just watching these guys interact, already it’s just spectacular. Harvard doesn’t have anybody that age group that’s even close to these guys. The future’s with us.” ■

To learn more about sleep, sleep deprivation, and your own sleep health, check the Web site of the National Sleep Foundation, www.sleepfoundation.org.



Lynn Churchill uses fluorescence microscopy to see which brain cells make sleep-related chemicals such as TNF.

Heidi B. Stanley '79

Vice Chair and Chief Operating Officer, Sterling Savings Bank.

Directs a \$7 billion financial institution.

Named one of the "25 Women to Watch in Banking" by *US Banker* magazine.

Loves to play golf with her husband, Ron.

WSU Alumni Association Life Member.

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an interview with

REBECCA MILES

Last May, Rebecca Miles became the first woman and, at age 32, the youngest person to be elected chairman of the Nez Perce tribe. In her one-year post representing the 3,000 members of the tribe, Miles has traveled the country speaking on issues like salmon recovery and the 150th anniversary of the Nez Perce treaty. She has also worked hard at home to address local issues, raise her two sons, and serve her community. A 1997 criminal justice graduate of Washington State University, Miles went on to earn a graduate degree in organizational leadership from Gonzaga University. She spoke with Hannelore Sudermann November 15, 2005, at the Nez Perce tribal headquarters in Lapwai, Idaho.

Pick your mentors and accept their help.

I was raised here on the reservation, and then I picked a school that was way too big. The social adjustment at Washington State was very hard. But Barbara Aston [WSU's tribal liaison] sat down with me for about two hours and worked out a schedule with me. We became friends. She's one of these real brilliant people, but not someone who is just for herself. Her passion is building a foundation for other people. I have other mentors, but she's a standout. I could talk to her about anything. I could talk to her about when my marriage ended.

Some things are not as hard as they look.

When I graduated, I was married and carrying my oldest one, Tommy. I had him in 1997. I got married while I was in school, and then had him, and then came to work for the tribe after that. Not too long after I had my first son, I got pregnant with the next one. At six and eight now, they're real close in age. Then I started my master's in 1999. People always asked, "How did you do it with two kids?" It really wasn't that hard.



Rebecca Miles '97

Find your motivation.

It was actually my kids that gave me the drive. I wonder, What would my life be like if I didn't have them? I had a really good job at the University Inn Pantry. I would have just stayed in that job. I really enjoyed it. I was a waitress, I moved up to supervisor. I got very good tips. I was comfortable. But then marriage and kids changed all that. I always give that credit to my children. They make you do things you think you cannot do. They took me out of limbo and kicked me in the rear.

Don't wait to follow your dreams.

I'd always wanted to further my education, but I could never really pinpoint

what I was good at except for leadership. It was something I understood. I enjoyed reading about it. I liked to study how leaders are effective. How does a top manager or top company accomplish something great? That's what led me to Gonzaga and a master's degree. That was so enjoyable: the course work, the professors, the university philosophy. It helped me build confidence in some of the ideas I already had.

Listen to that little urge.

It had always been my dream to go back to WSU and work on a Ph.D. in either education or history. I had been offered a job on campus. I knew that being employed there would be a foot in the door while I

decided what to study. But there was a small urge in me that wanted to know if I could run for office here [in Lapwai]. I realized that if I left, I might never come back. If I did, I'd probably be a lot older, maybe an old grandma, by then. I hadn't decided until the night before the elections that I was actually going to run for an open seat on the Nez Perce council's executive committee. Serving on the committee is a very tough job, and people can get very negative. For the most part, it was a small urge that said, Why don't you just try it out? I did.

Stick it out.

We had a very hard first year. We had a huge water-rights settlement with the United States and the State of Idaho that would settle the Nez Perce water claims forever. That is very big for tribes, for any tribe, to quantify your water and settle on that. This had been going on since I was a sophomore in high school. Little did I know I would be coming in on the very last leg of that, and that was the decision-making leg, that was the crucial time. Our people were really in an uproar about the settlement. I led the public meetings with our people and got chewed out quite a bit, got some nasty phone calls. I didn't sleep well. I even had tears over it. It was such a hard time. I just thought, I'm going to finish out my other two years and just serve as a member and follow a couple of initiatives for my people that I think are very important: suicide prevention and education.

Time brings change.

After May of this year everything changed. The former chairman of the executive committee did not get reelected. Then the buzz started that one of the members wanted to nominate me. What usually happens is, after our general council meeting, with the whole tribe present, we adjourn, and then the newly elected or reelected executive board members, the nine of us, get together right there and call a special meeting to order. Then we reorganize right there in front of all of our people.

This time I was nominated for chairman. Two other people were also nominated. I honestly didn't

think that I would get elected. And just like that, it changed.

Savor the moment.

When the last vote came down, you couldn't even hear the chairman of the general council say anything, because the yelling and screaming was so loud. It was because it never has happened in our tribe. You never had a woman chairman, ever. I got really emotional. I didn't even think about being the first woman. I didn't even think about being the youngest. I was emotional, because I felt that difficult year I just had, where I felt like almost quitting, culminated in a vote of confidence that I didn't expect. It said they believed something about me that I had even doubted in myself. My sons were there, and they witnessed it. It made them proud.

Set priorities and find balance.

One of the things I've grappled with as I've taken on this big role is this: we get tribal members who call in, or e-mail us, or call us and say, "Why isn't this a priority for you? This is something that is a necessity for all the people." One subject is land purchase. The other might be saving our language. Another is education. Another might be senior citizens and why we're not doing a better job taking care of our elders. Or salmon recovery, which has been a hot topic for the last 10 or 15 years and has heated up even more as we haven't yet recovered them. I sit in this office, and I think about it, and I get really frustrated. What is guiding what is a priority? We all have what is important to us personally, and we all think all those issues and 50 more are important to the tribe. It's the other members here who are going to get these things to happen. My goal as chairman is to be working on all of these issues systematically and for us to proceed in a way that in 10 years we can look back and say we accomplished our goals.

Draw your strength from those who came before.

When I have time to slow down and think about the enormous responsibility and work that it takes to do this job, I do get afraid. Fortunately I stay busy enough, and I work with a great staff. And

I think about my grandfather. He went through a hard time as an elected leader. He went through a hard time as a man. I'm just astounded by his life. Probably the other driving force besides my sons is him. When I think of him, I know I don't have anything to complain about. I don't have any excuse to fail.

Protect your privacy

You know the saying that it's lonely at the top? It really is. I'm not married now. So I do walk a very fine line in my personal private life. I basically don't have a visible private life to anybody. My own life with my two kids, I try very hard to keep that to myself.

Share your time and your values with your children.

This last weekend I took my kids to our tribe's veterans' dinner, which is always really good to go to. Our people honor veterans even more than this country does in general. Then there was a powwow this last weekend. We stayed for the memorials and name givings. Then we slept all weekend and baked cookies. It was really some good time. When I have to travel, it's hard. Sometimes if my sons are off of school, I try to take them with me. I don't want to turn around and have them be 17 and 18 and realize I've missed their lives. When it gets hard for me, they really encourage me.

We grew up really poor. But we had my mom at home, and my dad was working every day. I read about people who do come out of poverty, and a lot of it is because they didn't want to go back. . . . But I look at the foundation that my parents and grandparents were building. They were always giving, always sharing with people, even when they didn't have anything. I realize the value of that. Now I think my job is harder. My kids have everything. I work really hard to build into them giving and sharing. ■

CLASS NOTES

1940s

Shirley B. Gordon ('44 Chem. Ph.D. Ed.) has received the 2005 National Leadership Award from the American Association of Community Colleges. Gordon is the chair of the board of directors for Phi Theta Kappa at Highline Community College in Highline.

Jack Carter ('47 Ag. Econ.) was selected to receive the 2005 Agri-Business Award during the North Dakota State University Harvest Bowl.

Irwin Rose ('47 Zool., Pre-Med.) received the 2004 Nobel Prize in chemistry. He also received WSU's 2005 Regents Distinguished Alumnus Award.

Donald Leon Shaw ('48 Elec. Engr.), Mercer Island, has been retired from Westinghouse since 1984. He recently attended his 62nd high school reunion in Vancouver, Washington.

1950s

Janily Patrick ('58 Ed., '73 M.A. Ed.) has retired after 30 years of teaching, mostly in the Pullman school district. Janily looks forward to traveling and spending time with family during retirement.

Hellon (Davis) Stewart ('58 Ed.) has retired from Pasadena United School District and now co-chairs two docent programs at the Huntington Library and Botanical Gardens in Pasadena, California.

1960s

Ned Wogman ('61 Chem.) has been the director of the Homeland Security Program Office at the Pacific Northwest National Laboratory in Richland since February 2003.

William D. McFarland, Jr. ('62 Vet. Med.) of Fort Benton, Montana, received the president's award for the Montana Veterinary Medical Association in September. McFarland is the association's delegate to the American Veterinary Medical Association's House of Delegates.

Sam Reed ('63 Soc. Stud., M.A. Pol. Sci.) of Olympia was elected president of the National Association of Secretaries of State for 2005-06. In May 2005, Sam received Gonzaga University's Law Medal for his conduct during the 2004 gubernatorial election in Washington.

Elizabeth (Ahnquist) Taylor ('65 Soc.) of California has formed "Woodles" by Woody, a collection of folk-art line drawings. The website is www.woodles.biz.

Nayda Littlefield ('67 Ed.) of Moses Lake and her husband, Gregory, are ambassadors for Lions International, traveling the world under the title of District Governor D-5.

FARMING IN THE RAIN

The Hunter family built an empire on diversity. Besides pumpkins, the family seems to have tried everything, planting something new as a market arose.

FARMING IN THE SKOKOMISH River Valley can be a challenge, what with 60 to 80 inches of rain a year. One year, Hunter Farms's pumpkin fields flooded, the pumpkins bobbing like buoys on a temporary sea. Fortunately, the river receded in time for families across the South Puget Sound region to visit Hunter Farms and cart home their pumpkins.

One of the Hunter family cousins has a letter written by Isaac Woods soon after he arrived in the valley from Iowa in the 1880s. Apologizing that he couldn't repay the \$8.00 he'd borrowed from the recipient of the letter to move west, he complained about the 40 days and 40 nights of rain and worried that 40 more days would follow. He wouldn't, he concluded, give 40 acres in Iowa for the whole state of Washington.

But Woods stayed and was soon joined by his daughter and her husband, Olivia and William Hunter. And out of that initial adversity, the Hunter family built an empire on diversity. Besides pumpkins, the family seems to have tried everything, planting something new as a market arose, and continuing to grow whatever turned out profitable.

On a drizzly morning in October, sheltered just inside the farm's store on State Route 106 near Union, and surrounded by tables of fall vegetables, Bill Jr. '75 seems genuinely bewildered by how eastern Washington farmers can make it on one crop.

Bill's great-great-grandfather sold fruit trees. The farm store, where we're sheltered from the steady October drizzle, was once an oyster house. The family still maintains a small oyster beach on Hood Canal, a mile away.



Hannah Hunter Cleveland (center) represents the seventh generation of Hunters in the Skokomish River Valley. Holding her is her mother, Jami '02. Behind Jami is her father, Bill Hunter, Jr. '75, Luayne, Leslie '84, Allison, and Allison's father, Paul '85. At the far left is Allison's friend, Clara.

A lot of the farms in the area began by supporting the logging camps, says Paul '85. "They used to bring in barges and load them with hay, to feed the oxen and horses in the camps."

Great-uncle Harold sold potatoes to Fort Lewis in the 1930s. In the '30s and '40s, the family had its own milk-bottling plant. Bill Sr. delivered milk door to door in Bremerton.

Then the family got into corn, for cattle feed, and then tried sweet corn. And celery.

And Christmas trees. Paul and Bill figure that Christmas trees probably represent, among their diverse activities, their largest income. The family started selling Christmas trees off their forestland in the 1950s. Around 1970, they bought 10 city lots on 35th Avenue NE in Seattle. Starting the Monday before Thanksgiving, they sell their trees from that site, hauling a semi-load or two to Seattle every day. Although the lots were an excellent investment, even as a month-long venture every year, they're thinking of expanding the site's offering. Maybe a farmer's market.

"We get calls every month from someone wanting to sell it for us," says Bill Jr.

"Yeah, help the country bumpkins out," adds Paul, laughing.

Besides Paul and Bill Jr., Bill Sr. and Carol Hunter live and work on the farm, as well as

Bill Jr.'s wife, Luayne, and Paul's wife, Leslie '84.

Bill Jr.'s daughter, Jami '02, is the latest to join the family business. She graduated in agribusiness. She's happy to be here. "I don't want to get stuck in an office," she says. "I want to be free to use my brain."

Besides family, Hunter Farms maintains a crew of 15 to 20 year-round. Starting in January, they plant Christmas trees, then vegetables in the greenhouses. The farm's cattle herd starts calving in April. In winter there's also logging from their timberland. The end of July, they're picking sweet corn. They sell 10,000 bales of hay every year, mostly to small area farms, and put up as much for their own cattle. And in October, they haul in pumpkins from the generally unflooded fields.

As we talk, a busload of young children arrives. They chatter excitedly, eager to pick out their pumpkins. October weekends can find a thousand people meandering around the farm. They can wander through a hay maze or a corn maze. They can go for a wagon ride. And visit real live pigs and geese and goats. And Juno the Reindeer. All free.

"We like them to buy a pumpkin," says Paul. "But they don't have to. They have a lot of fun." ■

—Tim Steury

KELLY SMITH

*You don't want to be around him
when he loses . . .*

KELLY SMITH harbors such desire to win, that the coach gets testy for days before an ordinary baseball game. From the first pitch to the last, he's usually demonstrative, typically pessimistic, and occasionally combative. Along the baseline, his eyes seem to radiate heat while his mouth hurls verbal spears.

If you only encountered Smith at the ballpark, you might see why he playfully describes his diamond demeanor with a term that won't appear in this article.

"I think 'intense' is a nicer term," offered Smith ('80 Ed., Soc. Stud.), a former Cougar star who became the wildly successful skipper of the Red Devils baseball team at Lower Columbia College in Longview.

"Nobody *really* likes to play against me because I want to win," Smith said last fall as he prepared for his 12th campaign with the Red Devils. "I want to win every time out there. I'm just a little jerk."

And win Smith has. His LCC teams prevail in nearly four of every five games, have never missed the Northwest Athletic Association of Community Colleges tournament, and earned

a spot in eight title games in his first 11 seasons. The Red Devils nabbed the trophy in half of those title appearances, including the 2004 championship last May to top off a 35-5 regular season.

"He's a good coach and a poor loser," Washington State University head baseball coach Donnie Marbut said with a chuckle. Marbut previously coached at Edmonds and Bellevue community colleges and was among Smith's toughest rivals. "He's a good guy. I'd rather spend time with him off the field than on the field."

"Unless you play for me, there's no reason to hate me," Smith said—off the field and out of season, when he's perfectly relaxed. "I'm a decent guy."

"When you play for him, you really don't like him all that much," said Ryan Krauser, center fielder on LCC's latest title team and now at Washington State, where he is red-shirting this season due to an injury. "Once you're done playing for [Smith], you realize he gets the best out of you, because he pushes you and constantly challenges you. I'm pretty much ready for anything."

"Everybody has to work hard in the world to be a success. He's a hard worker," said Chuck "Bobo" Brayton ('50 Phys. Ed., '59 M.S. Phys. Ed.), the legendary WSU coach who is as impressed by Smith's coaching ability today as he was by Smith's fielding and hitting years ago. "He's got it all. I would have liked to see Kelly back here as an assistant or a head coach."

Smith's reputation wouldn't surprise anyone who followed Cougar baseball in

1980, when the speedy center fielder led the Pac-10 Conference with his .418 batting average, stole 30 bases, and crossed home plate an astonishing 69 times in 48 games on a talented team. Smith, also a defensive standout, was named a third-team All-American and selected in the 13th round of the professional draft. During a four-year career in the San Francisco Giants' organization, he worked up to Triple A, the final stop before the major leagues.

Yet, after playing prep ball in Longview, Smith said he likely wasn't good enough to compete at Washington State or even Lower Columbia College, already one of the region's best community college programs.

"I was the scrawniest little player you've ever seen," he said. "I was always fast and scrappy and a pain in the butt to play against."

Western Washington University's coach, Ralph Dickinson, saw Smith's potential and made sure he got playing time and hit the weight room. Smith would collect all-league honors at Western and by 1979 was ready to join Dickinson in Pullman when his mentor joined Brayton's staff.

After his pro career, Smith was an assistant coach at Portland State University and worked briefly outside the game before arriving at Lower Columbia as head coach, classroom teacher, and "head groundskeeper."

Smith knows that "the chance of making the big leagues and making big money are slim and none." So far, none of his former players have reached that pinnacle. But with his program built on discipline on the field and in the classroom, nearly all players go on to play ball and earn degrees at four-year colleges and universities.

"His guys know how to play," Marbut said. "They come prepared."

"Without him, I would probably be about two steps back from where I am," said Krauser, Smith's former player.

Players' successes beyond may make coaching rewarding, but it's all that darned winning that makes it fun.

"You don't want to be around me when we don't win," Smith said. "I'm pretty sure it's not the thrill of victory [that motivates his players]. It's the agony of defeat—and that would be me." ■

—Eric Apalategui

Kelly Smith's Red Devils, WSU's developmental squad, and six other teams from Washington, Oregon, and Alberta, Canada, will play in the Palouse College Classic March 3-5 at WSU's Bailey-Brayton Field and McDonald Park in Colfax.



BILL WASHNER

CLASS NOTES *continued*

Thomas George Eastman, Sr. ('68 Pol. Sci.) was appointed regional manager Northwest for the Ford Customer Service Division September 1, 2005. Eastman retired as an lieutenant colonel in the U.S. Army Reserve and has been with the Ford Motor Company for almost 30 years. He lives in Snohomish with his wife, Lori.

Tom Noer's ('68 M.A. Hist.) book, *Soapy: A Biography of G. Mennen Williams*, received the Michigan Historical Association Award for the best book of 2005. Noer is Valor Distinguished Professor of Humanities at Carthage College in Kenosha, Wisconsin.

Patricia Jean Scott ('68 Ed.) of Phoenix, Arizona, is a doctoral academic counselor for University of Phoenix Online.

Webster Ruble ('69 Comm.) of Oregon has just published a book of 12 short stories, *Pure Sawdust*, about Grays and Willapa harbors in Washington.

Lyle Erwin Russell ('69 Math.) retired from the City of Tacoma in 2004 after more than 32 years of service as a computer programmer and application systems analyst. He is now doing volunteer work for the Secretary of National Alliance for the Mentally Ill in Pierce County, and elsewhere in the mental health community.

Catherine Lee Wamsley ('69 Ed.) of Hermiston is executive director of Umatilla-Morrow Head Start, Inc. She has been with the agency for 30 years. Her husband, Tom, is a University of Oregon alum, and their son and daughter are both WSU graduates.

1970s

James Herbold ('71 Math., '72 Comp. Sci.) and wife, Margi, own and operate Bonner Garden Bed and Breakfast in downtown San Antonio, Texas.

Carol March ('71 Biol./Ed.) is starting her 30th year of teaching, with 20 years in Colorado Springs, Colorado.

Harold G. Butchart ('72 Lib. Arts, '74, M.A. Police Sci.) is stationed in Djibouti, East Africa, with the Combined Joint Task Force-Horn of Africa, Civil Military Operation for the War on Terror.

Scott Carson ('72 Bus. Admin.) was appointed vice president of sales at Boeing Commercial Airplanes in December 2004.

Bruce Foster ('72 Build. Theory & Pract.) was appointed president of Affholder Inc., a subsidiary of Insituform Technologies Inc., Chesterfield, Missouri. Affholder specializes in tunnel construction.

Mike (Charles M.) O'Connor ('73 Bus./Econ.), Spokane, was promoted to the post of Washington State direc-

Cliff Knopik '04 (left) and Aaron Johnson '03 share a podcast show on fatherhood.



DIGITAL DADDIES

AARON JOHNSON AND CLIFF KNOPIK, the odd couple of young parenthood, sit together in Johnson's Puyallup dining room while his newborn daughter, Brooklyn, sleeps in a bedroom nearby. His wife, Heather, makes dinner in their small apartment kitchen.

A laptop, two microphones, and a soundboard clutter the round table in front of them, as they settle in for a half-hour of *Who's Your Daddy*, a radio show-like podcast of not-so-typical guy talk: choking hazards, umbilical chords, creepy children's books, and breast feeding in public. Nothing's sacred for these two young fathers who feel their quirky take on parenthood is worth sharing.

Aaron and Cliff met at church and quickly discovered they had a lot in common, including parenthood, funny bones, and degrees from Washington State University. Johnson graduated in 2003, and Cliff earned a social sciences degree in 2004 through the Distance Degree Program.

Creating a podcast that they transmit on the Internet was Aaron's idea. The medium has been around for several years, but over the past year it has gone mainstream. "I thought, man I really want to do one," says Aaron. "I like that it's free and not regulated." And "all you need is headphones, a mike, and a way to record."

He started to think about what was interesting and important in his life, pondering a subject he'd like to discuss and explore in front of listeners. The fact that he was on his way to becoming a father was paramount. There aren't a whole lot of resources just for guys out there, he says. And with what there is, you still have to become your own expert, he adds. It also helped that his friend, Cliff, had two young children, a healthy sense of humor about parenting, and radio know-how.

So in August 2005, they kicked off their show with their first broadcast, tackling the topic of baby furniture. That first time, Cliff wondered what to expect from Aaron when they turned on the mikes. "But then Aaron said, 'Welcome to *Who's Your Daddy*. This is not a show about who your daddy is,' and I knew the tone," says Cliff.

When they're not parenting or podcasting, they're working. Cliff is a Web manager for a cable and networking supply company. Aaron is working construction while looking for a position that would allow him use of his criminal justice degree.

For both, this podcast is a weekly obsession. As they go through their days, they make notes on their experiences, creating fodder for airtime. But that doesn't mean they don't ad lib. "Once you hit record, it's amazing what you think of," says Cliff. On the day we visited (Episode 15) Aaron decided mid-broadcast to share a special souvenir—his new baby's umbilical cord scab, which had fallen off during the week, and which he had saved in a sandwich baggie. Cliff picked the baggie up and pronounced, "Holy cow . . . I hope it's Brooklyn's." And a whole conversation was sparked about umbilical cords.

Aaron and Cliff give voice to an oft-unheard sector of society. At first they wondered if they were the only two fathers on earth who cared about things like getting your kids to eat vegetables, Santa, and the Promise Keepers convention in Tacoma. They soon found that their effort was attracting listeners around the world. "I look at it as kind of an escape for the other fathers," says Aaron. But it's also an escape for them. "This is my one hobby right now," says Cliff, as he packs up his gear and gets ready to drive home to his wife, Kree, and children, Emmy and Orion. ■

—Hannelore Sudermann

CLASS NOTES *continued*

tor for Crown Financial Ministries in September.

Marie-Francoise Butchart ('74 For. Lang.) has begun her 25th year as a French language teacher and department chair at Saint Paul's High School in Covington, Louisiana.

Michael (Tony) A. Hudson ('75 Bus. Admin.) has joined LPL Financial Services Inc. in Lakewood.

Donna Nelson ('75 El. Ed., '81 M.A. Reading) is the elementary program teacher for the Montessori Children's School in Wenatchee.

Dan C. Jamison ('78 Hist., Ed.) is superintendent of the Sherwood School District, Sherwood, Oregon.

Lee Kilcup ('78 Const. Mgt.) is chief executive officer of GLY Construction in Tacoma.

Ronald E. Oscarson ('78 Ag. Engr.) has been director of facilities for Spokane County since October 2005.

Karen Molenaar Terrell ('78 Ed.) just saw her book, *Blessings: Adventures of a Madcap Christian Scientist*, make its appearance on amazon.com. Karen teaches social studies in the Burlington School District.

1980s

Matt Evans ('80 An. Sci.), Flagstaff, Arizona, is the business development

manager for Transnation Title Insurance Co. He has spent 20 years in banking.

Steve Gordon ('81 Bus. Admin. & Acctg.) is chief financial officer with the Trumba Corp. in Seattle. Trumba specializes in OneCalendar, a computer-based communication calendar.

Ronn Hagan ('81 Env. Sci.), Mandaville, Louisiana, and his family survived Hurricane Katrina with minor damage.

Margaret Simmons ('81 Home Ec.) is vice president of academic affairs at Grand Canyon University, Phoenix, Arizona.

David Sutherland ('81 Pharm.) is pharmacy manager at the Wenatchee Food Pavilion.

Cindy Jacobs ('83 M.S. Vet. Sci., Microbiol.; Ph.D. Vet. Sci., Microbiol.) is executive vice president and chief medical officer of OncoGenex Technologies, Inc., Seattle, a clinical-stage biotechnology company.

Bradley A. Roeber ('83 Acctg., Bus. Admin.) has been the regional president of AAA Chicago since April 2005.

Kirsten Birkeland ('84 Comm.) married Eric Koldinger on Sauvie Island, Oregon, September 18, 2005. Kirsten is working for Waggener Edstrom, a global high-tech public relations firm.

Kraig Naasz ('84 Hist.) is president and chief executive of the National Mining Association.

John Schultz ('84 Pol. Sci.) is senior vice president of business development for Clinical Data, a pharmacogenomics company in Newton, Massachusetts.

Jody Stewart-Strobel ('84 Pol. Sci.) was named Eastern Washington University's Faculty of the Year in 2005. Stewart-Strobel teaches German.

Kitty Gibbs ('85 Comm.) launched her own marketing and communications consulting business, Kitty Gibbs Marketing & Communications, in Gig Harbor.

Mike Wurm ('85 Soc. Stud., Ed.) is chief professional officer for the Boys and Girls Club of Truckee Meadows, Nevada. Wurm has worked for the Boys and Girls Club for 10 years.

Alysonn (Olcott) Cassidy ('86 Gen. Stud.) is a freelance newspaper and magazine columnist living in California. Alysonn's last child just started kindergarten.

Lori L. Bye ('87 Rec. & Leisure Stud.) is manager of the Foothills Recreation and Aquatics Center in Glendale, Arizona.

Jim Drinkwine ('88 Comm.) graduated with an M.B.A. from City University in June 2005.

Scott McVay ('88 Psych.) is vice president and private banking officer for Columbia Bank in Tacoma.

1990s

Mark Field ('92 Gen. Stud.) and his wife, **Elesa Field** ('93 Engl.), Bothell, announce the birth of son Ethan on December 29, 2004.

Jeff Gehrman ('93 Anth.) is director of sales for Best Western Lakeway Inn & Convention Center, Bellingham.

Bradley Parish ('93 Crim. Just., Soc.) joined the law firm of Zimney Foster P.C., Grand Forks, North Dakota, as a member attorney.

Laura Bridges ('95 Engl.) was appointed community outreach manager for the City of Gresham, Oregon, in July.

Jennifer R. (Fenich) Burger ('95 Hum. Nutr. & Food Sci.) and husband Everett welcomed Ashleigh Marie on October 29, 2004. Jennifer is a physicians' assistant in Spokane Valley.

Darhl Edwards ('95 Bus. Admin. and Const. Mgmt.) and **Lusol (Jimenez) Edwards** ('93 Ent.) welcomed daughter Indi Edwards on May 10, 2005. The Edwards family lives in Snoqualmie.

Tom McGirk ('95 El. Ed., Engl.) is regional manager for Naegeli Reporting Corporation in Spokane.

Patrick Waer ('95 Hist.) and **Natalie (Francek) Waer** ('94 Fam. & Child Stud.) welcomed their first son, Jackson Charles, on May 18, 2005. Patrick is an



James Donaldson's journey

COLLEGE BASKETBALL STAR, pro athlete, and businessman James Donaldson '79 can add reading volunteer to his list of accomplishments. The former Cougar and NBA player recently received the 2005 Jeri McDonald Community Service Award for opening fitness centers to serve and revitalize communities in less-affluent neighborhoods in Seattle, Tacoma, and Mill Creek, and for his extensive community work, such as reading to children at McCarver Elementary in Tacoma. McDonald, also a WSU graduate and a friend of Donaldson's, was a leading public relations executive in Seattle who died of cancer in 2001.

For the full story on Donaldson, visit *Washington State Magazine Online*, wsm.wsu.edu. ■

MATT HAGEN

**Betsy Rogers
'89 traded her
corporate life
for the kitchen.**

BETSY ROGERS '89 had her eureka moment while sitting in a cooking class.

It was 2000, and the Seattle-based public relations specialist had recently lost her job in a downsizing. Instead of jumping back into a new job, she decided to freelance and take her time in deciding what to do next.

"I did like being self-employed, but I didn't like what I was doing," she says. What she really enjoyed was food, though. With some extra time on her hands, the Washington State University public relations graduate signed up for a cooking class.

"So I was thinking about what things really get me jazzed, and I started taking this nine-week course," she says. At the same time, while researching a career direction, she stumbled across the Web site for the U.S.



DAN SCHATTER

COOKING IS ITS OWN REWARD

Personal Chef Association. That same night in class, over stuffed cherry tomatoes and chicken liver mousse, she learned that the classmate sitting next to her was training to be a personal chef. The idea gelled.

Within two months, she had launched her business: Ovens to Betsy, a personal chef service for people who are often too busy to cook for themselves.

Today, instead of putting on a suit and stepping into the corporate world, Rogers starts her mornings at the grocery store. Dressed in full chef habiliments and toting an efficient checklist on a silver clipboard, she dives in. First, she makes a quick stop at the cheese station to try some samples. "Mmmm. It's breakfast," she says. Next, she's hunting down basics like milk and eggs, pausing on the way to the green beans to look over the pears for a pear-ginger tart. Then she spins back down a center aisle to find tapioca. Finally, Rogers darts off to pick up some crystallized ginger before checking out.

On this day, after leaving the store, she steers her Volkswagen to Redmond where she's chef to a family of five. Pulling up a long drive to a large house in a quiet neighborhood, the chef starts unloading her car, first taking in the groceries through a door to the kitchen, then picking a large food processor out of the back seat, and finally lifting a

Craftsman rolling tool case from the trunk. That's her first rule of cooking: plan ahead, make sure you have everything. Her case holds bowls, pans, strainers, graters, plates, and every kind of kitchen foil, wrap, and paper.

Then she starts in on her second rule, ensuring that the kitchen is clean and ready. She commences her *mise en place*, prepping and arranging the food according to the dishes she'll be making. She plops a stack of white towels next to the sink, tucking one into the belt of her apron. And, at last, before starting to cook, she opens her tool chest, picks out the knife roll, selects several knives, and starts to hone them.

Being organized allows Rogers to accomplish in one day what most families struggle with all week: making meals. For this busy family, she prepares five separate meals to get them through the weekdays. The menu might include chipotle burritos with meat braised in a pressure cooker until it's meltingly tender, tandoori chicken with coriander she toasted herself, and manicotti from her hand-made crepes.

Rogers has a vast selection of recipes and tries not to repeat a menu offering for six months. That is, unless the client requests a repeat. The chipotle burritos are typically in high demand. Usually Rogers plans the

entrees and then submits a list to the client before hitting the store.

"I love cooking anything ethnic, especially if it's hot and spicy," she says, though she admits to making good comfort food like lasagna and baked chicken. In planning her menus, Rogers likes to work with foods and styles that are in season, and will hunt for the ripest, freshest produce. The winter menus often include braises and roasts, while the summer fare might offer barbecued beef in a marinade and light Vietnamese-style spring rolls.

"I'm not big on diet foods," says Rogers. Her philosophy is to eat what you want, just use moderation. But she has been known to adapt to special diet needs. One of her clients turned to her for help after being diagnosed with cancer. Rogers took charge of the meals as the client requested, and then on her own initiative started working in tasty, healthy dishes that would appeal to her client, who had lost her appetite to chemotherapy.

Food is such a personal thing for some people—it's about being home, being with family, and caring about what you put into your body, says Rogers. Being able to do something she loves for a living, and hearing the appreciation of her clients are the best rewards, she says. "Yeah, I'm not making as much as I did in PR, but I'm much happier." ■

—Hannelore Sudermann

A recipe for Chef Betsy's popular chipotle burritos can be found at Washington State Magazine online, wsm.wsu.edu.

assistant baseball coach at Fresno State University, Fresno, California.

Jason Weisner ('95 Mgt.) has opened a Pizza Schmizza franchise in Longview, Washington.

Matt Drew ('97 Comm.) was appointed lead account executive for the Campbell-Ewald Advertising North Central Region in Chicago on the Chevrolet account.

Kelly (Keeler) Reep ('97 Comm.) is the Skagit Valley College Foundation event coordinator/fundraiser.

Robert Waymire ('97 Fin.) was promoted to Southwest regional analyst for Hyatt Hotels and Resorts.

Jennifer A. Becker ('98 Bus. Admin.) married Matthew Harris on June 18, 2005, in Colfax.

Matt Malgensini ('98 Civ. Engr.) married Michelle Wright in Seattle in August. Matt is a civil engineer, and Michelle is an advertising director. They live in Everett.

Daniel Evans ('99 Comm., '02 M.B.A.) is assistant vice president and business relationship manager at Wells Fargo's Eastern Washington Business Banking Center in Spokane.

Mareth Flores ('99 Comm.) and Jayson Francis were married June 25, 2005, in Issaquah. They now live in Bellevue.

2000s

Gale Mickelson ('00 HBM) is an account executive for Northwest Embroidery in Milton.

Ray Deyo ('01 MIS) and **Kalae Chock** ('02 Comm.) were married June 24, 2005. Kalae is an anchor/reporter for KPAX news and Rob is a data analyst for the Forest Service. They live in Missoula, Montana.

Danielle Heitert ('01 Psych.) and **Justin Zemlicka** ('03 Crim Just.) were married July 16, 2005.

Jeremy Lewis ('01 Bus. Admin.) is a district supervisor and financial advisor for Waddell & Reed Financial Services.

Carmen Seidel ('01 Hum. Dev.) and husband, Shaun Seidel, had a baby, Aryanna Nicholle Seidel, September 4, 2002. Carmen works for as a universal banker for the U.S. Bank in Yakima.

Debra Riendeau ('02 Nurs., '04 M.S. Nurs.) joined the faculty at St. Joseph's College in Standish, Maine, as an assistant professor of nursing in fall 2005.

Sarah Anne Johnson ('03 Engl.) is working for Americorps VISTA and organizes book drives, fundraising, and reading events.

Carly Morse ('03 Mvt Stud.) is coordinator for Sport Clubs and Youth Programs for University Recreation at WSU.

Catherine Muench Walker ('03 Sport Mgt) is assistant director of compliance at Elton University's athletic department.

Wyoshe Umeca Walker ('03 Engl.) is a special education paraprofessional in the Seattle School District. She is pursuing a master's degree in teaching.

Jaime Lynne Wilcox ('03 Comm.) is the director of youth and children's ministries at The Community Church of Smoke Rise in Kinnelon, New Jersey.

Camille Marie Williams ('03 Sport Mgt) teaches in the Try Wait! Program for middle and high school students in Kailua, Hawaii. She married Justin Word on August 21, 2005.

Laurie Carlson ('04 Ph.D. Hist.) is the founder of *Field & Feast* magazine.

Joey Allen Currie ('04 Crim. Just.) is a project manager for a company based in Milwaukee, Wisconsin. He travels around the United States to work with businesses in OSHA compliance and safety.

William LaValley ('04 Soc. Sci.) is the purchasing agent for Samson Rope Technologies' Ferndale location.

Daniel J. Moody ('04 Comm.) is a market manager for the American Diabetes Association in Vancouver. He coordinates American's Walk for Diabetes events and the School Walk for Diabetes programs for Oregon and Southwest Washington.

Daniel Reidt ('04 Pharm.) bought the Hart & Dilatush Pharmacy in Spokane in September 2005.

Jane Ann Schiltz ('04 Fine Arts) is doing relief work with AIDS orphans in Musoma, Tanzania.

Bryan Jackson Taylor ('04 Comm.) is an outside sales and marketing representative with Gerber Collision and Glass in Renton. Bryan completed a summer internship with the Bellevue Chamber of Commerce in 2004.

Jessica Gonzales ('05 Bus. Admin.) is an insurance agent for Farmers Insurance in north Spokane. ■

IN MEMORIAM

1920s

Lillian Margaret (Rivers) Stolt ('26 Off. Admin.), 98, August 28, 2005, Anchorage, Alaska.

Rudolph A. Anderson ('27 Bus. Admin.), 102, October 14, 2005, Shoreline.

Louis Victor Bruno ('27 Ed.), 98, August 2005, Allyn.

Isobel Leber ('28 For. Lang. and Lit.), 98, 2005, Longview.

1930s

Merle Gordon Poland ('30 Elec. Engr., '33 M.S. Elec. Engr.), 96, August 15, 2005, Portland, Oregon.

Daniel Alexander Razey ('31 Hort., '42 Ed.), 98, July 19, 2005, Naches.

Dorothy (Frederick) Sparks ('32 Hist.), 93, February 26, 2005, Ellensburg.

Howard Willis Salquist ('33 Pharm.), 93, August 25, 2005, Moraga, California.

Claude Irwin, Sr. ('34 Pol. Sci.), 93, November 14, 2005, Spokane.

George Furman Snelson x'34, 91, March 26, 2005, Poulsbo.

Grace Ensley Andersen ('35 Home Ec.), 94, July 23, 2005, Seattle.

William Hall ('35 Ag. Ed.), 94, July 17, 2005, Vancouver.

Margaret Misselhorn Jones ('35 Home Ec.), 92, February 19, 2005, Nehalem, Oregon.

Ray Hilding ('36 For. & Range Mgt), 94, September 22, 2005, Pendleton, Oregon.

Florence McEachran Garber ('37 Home Ec., '38 Ed.), 89, September 4, 2005, Spokane.

Robert James Jarvis ('37 El. Engr.), 90, October 2, 2005, Spokane.

James Quitslund ('37 Bus.), 89, May 29, 2005, Seattle.

Myra F. Rand ('37 Soc.), 90, September 7, 2005, Arlington, Virginia.

George H. Farrah ('38 Chem. Engr., '40 M.S. Chem.), 2005, New Kensington, Pennsylvania.

Gertrude Rea Herrmann ('38 Math.), 91, July 22, 2005, Seattle.

Dordena H. Rogel ('38 Mus.), 92, May 15, 2005, Federal Way.

Bill Hopkins ('39 Gen. Ed., Journ.), 87, October 22, 2005, Spokane.

1940s

Ed K. Erickson ('40 Ed., '65 Ed.D.), 89, July 15, 2005, Yarrow Point.

Robert Rees Gebert ('40 Econ.), 88, July 16, 2005, West Vancouver, British Columbia.

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Max F. Schoening ('40 Phys. Ed.), 90, August 9, 2005, Puyallup.

Helen Johnson Heinemann ('43 Home Ec.), 83, June 21, 2005, Ritzville.

Bernard Pinckney ('43 Vet. Med.), 84, July 2005, Tacoma.

E. June Schmick ('43 Home Ec.), 84, September 19, 2005, Colfax.

Frederick A. Hunter ('45 Vet. Med.), 84, October 5, 2005, Spokane.

Jaroslav Zdenek Jizba ('47 Civ. Engr.), 81, September 30, 2005, Omaha, Nebraska.

Kathryn Jean Noftsinger Moore ('47 Sp. Comm.), 80, July 16, 2005, Gig Harbor.

Maurice D. Root ('47 Civ. Engr.), 82, June 20, 2005, Shoreline.

Breese E. Bell, Jr. ('48 El. Ed.), 83, September 22, 2005, Portland, Oregon.

DeLores "Johnnie" Davis ('48 Ed.), 78, April 8, 2005, East Wenatchee.

George Beaudreau ('49 Chem.), 79, October 19, 2005, Portland, Oregon.

Leroy B. "Roy" Stave ('49 Bus. Admin.), 79, August 28, 2005, Everett.

Don (Pete) Watson ('49 Psych., '50 Ed.), 77, October 28, 2005, Kent.

Ronald Ross Woodward ('49 Sp. Comm.), 78, September 10, 2005, Spokane.

1950s

Robert H. Asmussen ('50 An. Sci.), 83, November 4, 2005, Bellevue.

William F. "Bill" Dunn ('50 Phys. Ed.), 82, August 22, 2005, Everett.

Delores Joanne (Prichard) Sanders ('50 Mus.), 76, November 14, 2005, Roseburg, Oregon.

Wallace "Wally" J. Turner ('50 Bus. Admin.), 79, July 25, 2005, Palm Desert, California.

Barbara Lee Wise ('50 Hist.), 76, August 1, 2005, Everett.

William B. Allinger ('51 Ed.), 80, December 6, 2004, Vancouver.

Janice Ruth Beckman ('51 Bus. Admin.), 75, August 20, 2005, Seattle.

Edward R. Harrington ('51 Pharm.), 79, August 5, 2005, Bellevue.

James E. Keller ('51 Mech. Engr.), 78, August 28, 2005, Vancouver.

Robert Vernon Smith ('51 Mech. Engr.), 78, July 19, 2005, Whidbey Island.

Thomas G. Brown ('52 Pol. Sci.), 77, May 30, 2005, Temecula, California.

John (Larry) Fullner ('52 Wildlife Biol.), 75, July 30, 2005, Bothell.

William Theodore "Bill" Harnes, Jr. ('52 Mech. Engr.), 81, October 20, 2005, Pasco.

Dale C. Plaggemeier ('52 Pol. Sci., '62 M.S. Mech. Engr.), 76, August 5, 2005, Tukwila.

William "Bill" Gene Sutton ('53 Sp. Comm.), 75, September 30, 2005, Richland.

Herbert Milton West ('53 Hotel and Rest. Admin.), 77, July 21, 2005, Winston-Salem, North Carolina.

Donald R. Young ('53 Bus. Admin.), 73, August 5, 2005, Beaverton, Oregon.

James M. Hagen ('55 M.S., '59 Ph.D. Psych.), 81, October 11, 2005, Idaho Falls, Idaho.

Donald French Dickey ('56 Econ.), August 2, 2005, Boise, Idaho.

Newsom Kellogg Baker ('57 Bus. Admin.), 75, July 7, 2005, Clallam Bay.

Robert Dolphin ('58 Vet. Sci.), 79, June 30, 2005, Salt Lake City, Utah.

Sandra Jane Shurtleff Lewis ('59 Fine Arts), 68, August 17, 2005, Lexington, Kentucky.

Clydeana D. Pouria ('59 Int. Des.), 71, August 7, 2005, Everett.

1960s

C. Keith Birkenfeld ('60 Soc. Stud.), 66, September 7, 2005, Bainbridge Island.

Douglas A. Mackie ('61 Soc.), 70, August 26, 2005, Port Townsend.

Dick Clements ('65 Bus.), 61, September 15, 2005, Naches.

Dennis Obert ('65 Arch. Engr.), 62, July 12, 2005, Portland, Oregon.

Larry L. Link ('66 Elem. Ed., '69 Hist.), 62, August 6, 2005, Lynnwood.

Karen McBeth ('68 Hum.), 59, September 3, 2005, Port Townsend.

William Barrington Abrams ('69 Mech. Engr.), 58, August 17, 2005, Cheney.

Craig Switzer ('69 B.A. Ag Mech., For., M.S. For.), 62, April 16, 2005, Walla Walla.

Kristin Olson Wheeler ('69 Soc.), 57, May 4, 2005, Grapevine, Texas.

1970s

Donald Ernest Zimmerman ('71 Sp. Comm.), 62, February 24, 2005, Port Orchard.

Richard "Rich" John Hill ('72 Zool.), 56, July 8, 2005, Soldotna, Alaska.

James W. Philopant ('73 Bus. Admin., Acctg.), 55, November 20, 2005, Spokane.

Patricia Samuelson ('78 Pharm.), 50, August 15, 2005, Spokane.

Barbara O'Hanlon Hellesto ('79, Engl.), 64, October 23, 2005, Pullman.

1980s

David R. Retan ('84 Gen. Stud.), 52, October 27, 2005, Moscow, Idaho.

1990s

Kathleen Sue Tollefson ('96 M.S. Env. Sci.), 54, November 19, 2005, Pasco.

Janet Ichikawa ('99 Bus. Admin.), 28, September 11, 2005, Seattle.

Heather E. Rider ('99 Wildlife Mgt), 28, September 11, 2005, Seattle.

John Sowers ('98 Vet Med.), 35, October 3, 2005, Phoenix, Arizona.

2000s

Bryce Warner Hampton ('00 MIT), 44, November 2, 2005, Vancouver.

Faculty and Staff

Frank K. Bracken, 81, November 27, 2005, Pullman. Frank taught in the veterinary science program, 1953-86.

Frank Brands ('60 M.S. Elec. Engr.), 78, August 30, 2005, Coeur d'Alene, Idaho. Taught electric engineering until 1991.

Brian Harvey ('70 Hist., Engl.), 61, July 22, 2005, Marysville. Brian was a systems and programming professional from 1970 to 2000.

Josephine Hobbs, 77, November 26, 2004, Story, Wyoming. Josephine worked at The Bookie from 1960 to 1986.

Charlotte E. Hornbuckle, 88, September 22, 2005, Emmett, Idaho. Charlotte worked in food service at WSU.

Val E. Limburg, 67, October 11, 2005, Pullman. Val was a professor in the Edward R. Murrow School of Communication. He joined the school in 1967.


Catherine Northrup, 96, May 7, 2005, Sun City, Arizona. Catherine was dean of women and associate dean of students from 1956 to 1972.

George A. Padgett, 73, December 21, 2004, Okemos, Michigan. George was a faculty member from 1965 to 1977.

Harold Paul Ponti, 80, July 18, 2005, Prosser. Harold worked as operations manager for the WSU Research Center from 1950 until he retired in 1972.

Rob Ragatz, 55, August 11, 2005, Lewiston. Robert worked as the associate director and director of training for the WSU Counseling Center for 26 years.

John F. Szablya, 81, October 29, 2005, Kirkland. John was a member of the electrical engineering faculty, 1963-81. ■



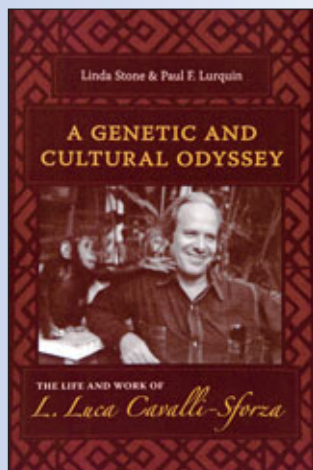
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BOOKS, etc.



A Genetic and Cultural Odyssey: The Life and Work of L. Luca Cavalli-Sforza

By Linda Stone and Paul F. Lurquin
Columbia University Press, New York, 2005

Anthropology embraces four disparate subfields: archaeology, physical anthropology, linguistics, and cultural anthropology. Few people today are able to make significant contributions to more than one of these. This book celebrates a career marked by signal contributions to all four, and to genetics as well.

Born Luigi Cavalli in Genoa in 1922 and, following his father's death, formally adopted at age 27 by his maternal stepgrandfather, Count Sforza, Luigi Luca Cavalli-Sforza (hereafter, Cavalli) has come to be a leading figure in anthropological genetics—a field which he in fact has helped define. His accomplishments have been recognized by election to the National Academy of Sciences (U.S.) and the Royal Society (Great Britain), receipt of the International Balzan Prize, and various honorary degrees. More locally, Washington State University invited him to deliver its annual Philip Holland lecture in fall 2005.

Such distinction was far from pre-ordained. Considering his math background insufficient, Cavalli avoided the university training in engineering his parents wished for him. Floundering, he decided in 1938 to enroll in medical school—a decision that was, two years later, to spare him from the draft in World War II Fascist Italy.

He received his M.D. and practiced medicine, mainly in hospitals, until the end of the

war, but he was attracted to research more than practice. A post-war job at a nonprofit pharmaceutical company in Milan studying the resistance of bacteria to mutagens such as ultraviolet light introduced him in a serious way to the field of bacterial genetics. This in turn led to a lucky break—an invitation, quickly accepted, to join Ronald Fisher's renowned lab at Cambridge University in 1948.

While at Cambridge, Cavalli made two significant contributions to genetics. First, he produced and isolated a mutant strain of *E. coli* that he and others would later use to discover and clarify the nature of "bacterial sex" (conjugation). Second, he began work on the important and difficult problem of traits that are caused by more than one gene—polygenic traits—an interest still pursued in his lab at Stanford.

The position at Cambridge proved to be temporary, though, and Cavalli, now four years married with two children, returned to the Milan pharmaceutical company in 1950. Over the next eight years, along with Americans Joshua and Esther Lederberg, with whom he had established a collaboration while at Cambridge, he published definitive results on conjugation.

Despite this enormous success, Cavalli was increasingly drawn to human genetics, and began to collaborate on studying genetic variation in the valley of Parma, for which nearly complete demographic records were available. Using computer simulation anchored by these records, he and his coworkers were able to demonstrate that genetic drift was a powerful force in establishing the actual gene frequencies producing the three blood factors they could study. This work—completed at the University of Pavia, where Cavalli had moved in 1963—not only demonstrated the utility of computer simulation in population genetics, but also anticipated by several years Kimura's better-known work on the importance of neutral variation.

Any suspicion that Cavalli still suffered from weakness in mathematics can be put to rest by consulting the formidable text *Genetics of Human Populations*, published in 1971 by Cavalli and Walter Bodmer, whom Cavalli also met through Fisher's lab in Cambridge. In this same year Cavalli moved to Stanford, where he remains as an active professor emeritus. From that base he continued to broaden his research interests, making significant contributions to understanding first the spread

of the Neolithic—and Neolithic farmers—into Europe, then the spread of modern humans throughout the world, and the relationship of these movements of people to movements and prehistories of languages. In all this work Cavalli has made great advances by collaborating openly and with good people, and by embracing and helping to develop new techniques that moved genetics from the study of a few proteins to the manipulation of the massive databases that result from direct sequencing of DNA. His imagination—for example, in being among the first to recognize that our genes retain traces of our distant past—is simply remarkable.

His greatest contribution may prove to be another of these collaborations, this one seeking to bring a scientific understanding to culture change by linking it to processes of transmission already understood through population genetics. This work, originally published with Stanford biologist Marcus Feldman in their 1981 book *Cultural Transmission and Evolution: A Quantitative Approach*, was at first largely ignored within anthropology, but has been gaining converts over the last decade as anti-science postmodern tides in anthropology have begun to ebb.

By the title of their biography, Linda Stone, a cultural anthropologist, and Paul Lurquin, a geneticist—both at WSU—invite us to consider Cavalli as Odysseus. Certainly Cavalli gained wisdom through his travel and field research around the world (barely mentioned here, but detailed in the book). Just as the Greeks used Odysseus's encounters with the divine, the animal, and the human to help them define what those categories meant for them, so too we can use Cavalli's work to help us understand the relationship of our prehistory to ourselves, and of our nature to our culture. Stone and Lurquin's intellectual biography is a fine place to learn about the full range of Cavalli's research, and along the way, to glimpse concurrent developments in genetics, one of the big success stories of science in the 20th century.

For more information, see wsm.wsu.edu/bookstore/Fac-Science-Books.html.

—Tim Kohler, Professor of Anthropology, Washington State University. Kohler's most recent book, *Archaeology of Banderol National Monument: Village Formation on the Pajarito Plateau, New Mexico*, was published by the University of New Mexico Press in 2004.

Call-A-Coug Outreach

Reconnecting the WSU family one call at a time

Five nights a week, the basement below the Lewis Alumni Center bustles with activity as teams of students spend hours each evening connecting with WSU's alumni, parents, and friends through the Call-A-Coug Telephone Outreach Program.

Nearly fifty students each semester are employed at Call-A-Coug to update alumni contact information, talk about recent activities on campus, and ask for gifts to benefit programs across the campus. The importance of what happens during these calls goes well beyond the millions of dollars raised. Graduates enjoy hearing news from campus and sharing their WSU memories with the latest generation of Cougars. Students gain tremendous knowledge about the University and learn valuable job experience.

According to senior Orion Cassetto, the true value of the phone calls is in the connection between the student callers and the alumni they call each night. "It's not only about raising money for WSU. We get to meet new and interesting people who, like us, are strongly connected to the University."

Senior Sean Pilarski says the most important thing he has learned through the experience is that "once you're a Cougar, you're always a Cougar. What alumni give back to WSU is a tremendous example of this."

"Our student callers are reminded daily what a great decision they made in attending WSU," says Call-A-Coug program manager Chad Warren. "The callers are building positive and long-lasting relationships with our alumni, parents, and friends while reconnecting them with the WSU family in a personal way. The students, the alumni, the University—everybody wins."



Seniors Jeni Becker (Pharmacy) and Orion Cassetto (Asian Studies) are among the Call-A-Coug student callers making connections with alumni, parents, and friends.

WASHINGTONIA

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MAXIMUM VISIBILITY: Unless you've been living on Venus for the past few months, you've probably seen photos of Seattle's Space Needle turned crimson and gray just in time for the Apple Cup. This unprecedented transformation came about through Washington State University trumping the University of Washington in donating to Habitat for Humanity's "Tackling Hurricane Relief" contest in November. Money raised during the contest went to Habitat for Humanity's "Operation Home Delivery," a program focused on rebuilding on the Gulf Coast. The 13-day contest garnered a total of \$164,293.62, with WSU fans contributing \$97,947.05.

Chateau Ste. Michelle Diversity Scholarship Fund

Diversity Fund Opens Doors to All

Senator John F. Kerry and his wife, Teresa Heinz Kerry, were among a capacity crowd of more than 300 for the Chateau Ste. Michelle Diversity Scholarship Dinner and Concert at the Chateau Ste. Michelle Estate in August 2005. The fourth annual fundraiser generated more than \$200,000 for the Chateau Ste. Michelle (CSM) Diversity Scholarship Fund, which provides scholarships to underrepresented minority students at the University of Washington and Washington State University.



Senator John F. Kerry greets
WSU graduate Chris Wells
(’05 Bus. Mgt.)

“Higher education is vital to the success of our state’s young people,” says Ted Baseler (’76 Comm.), president and CEO of Chateau Ste. Michelle. “It is important that we help provide the means for high-achieving students, regardless of their financial resources, to continue their education, preparing them for successful lives as community leaders and informed citizens.”

“Diversity scholarships, such as those made possible by the CSM Diversity Scholarship Fund, enable WSU to offer a diverse, well-rounded educational experience befitting a world-class university. All of our students benefit from the experience.” says WSU president V. Lane Rawlins.

Since its inception, the CSM Diversity Scholarship Dinner and Concert has generated more than \$800,000 in support of diversity scholarships at Washington’s two largest universities. To date, \$228,000 in scholarships have been awarded to more than 50 WSU students through the CSM Scholarship Fund, which is managed by the Washington Education Foundation. A fifth dinner and concert event is being planned for 2006.

To learn more about the Chateau Ste. Michelle Diversity Scholarship Fund, visit www.waedfoundation.org/stemichelle/index.htm. You can contribute directly to the fund by contacting Milton Lang, Associate Vice President for Equity and Diversity at WSU, at 509-335-8888.

WHAT'S YOUR LEGACY?

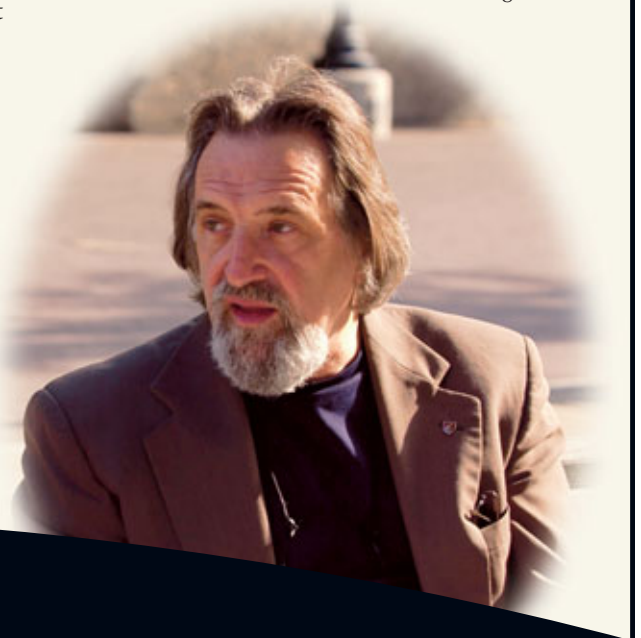
Eugene Rosa, the Edward R. Meyer Professor of Natural Resource and Environmental Policy and professor of sociology at Washington State University, believes in the importance of public education and thinks it more important than ever that public education be supported from a diversity of resources.

With smart estate planning, Gene added to his WSU legacy by establishing an endowment and designating a portion of his estate to WSU in his retirement plan. Gene's legacy will benefit the sociology department and the WSU Art Museum.

"Never be entirely satisfied with past accomplishments; relentlessly seek new challenges."

—Eugene Rosa

Gene hopes these gifts will help nudge young researchers to conduct innovative research as well as accelerate the increasing sophistication of the visual arts on the WSU campus.



The WSU Foundation provides a FREE planning kit to help you think through your estate planning objectives. To receive your kit, contact the Gift Planning Office at 800-448-2978.

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