

Washington State

m a g a z i n e

The Beauty of Evolution

Also in this issue: A basketball diet
Mildew Manor **and** Equestrian
gymnastics



preventing disease, transforming lives

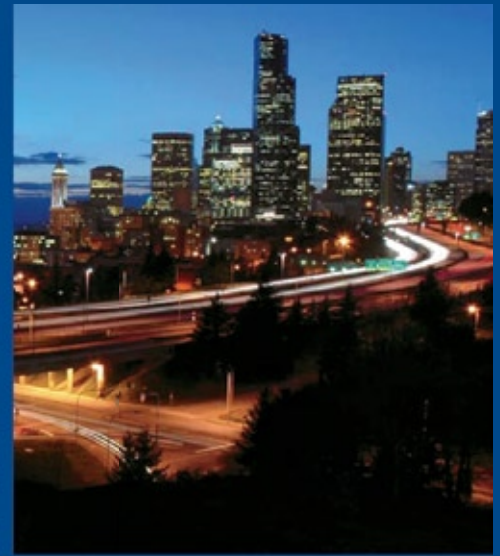
Professor Guy Palmer is striving to improve the health, education, and economic realities of the world's poor.

Dr. Palmer—recently elected to membership in the prestigious National Academy of Science's Institute of Medicine—is developing a vaccine to prevent two serious tick-borne diseases in cattle common to tropical climates. The diseases often cause severe hardships for families in developing countries whose livelihoods depend on a handful of cattle.

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- A poor family in Peru can purchase needed medicine because its cattle bring good market prices
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Dr. Palmer isn't alone in his research quest. Dozens of Washington State University researchers daily seek knowledge and discoveries to drive innovation and transform lives.



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by Michael Webster

Some have told me that evolutionary explanation robs nature of beauty by reducing it to a cold mechanical process, “red in tooth and claw,” as the saying goes. This attitude puzzles me, because all the evolutionary biologists whom I know—and I know many!—are driven by a love for nature, and to them nothing is more exciting than to uncover some hidden aspect of a natural system.

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By Hannelore Sudermann

Ray Troll '81 has a species of ratfish named after him, *Hydrolagus trolli*. He calls Darwin “Chuckie D” and paints pictures of him driving around in an Evo. This is a man who has embraced his past and paints it wildly and beautifully.

• EVON ZERBETZ

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By Cherie Winner

All of modern biology and medicine is based on the theory of evolution, and every life scientist arguably is an evolutionary biologist. So where to start in exploring evolutionary biology at WSU? How about with dung beetles, African violets, and promiscuous wrens?

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By Will Hamlin

Skepticism can forestall a too-willing acquiescence to the way-things-are; it can distance us from dogmatism and ward us away from zealotry; it can expose our mistakes.



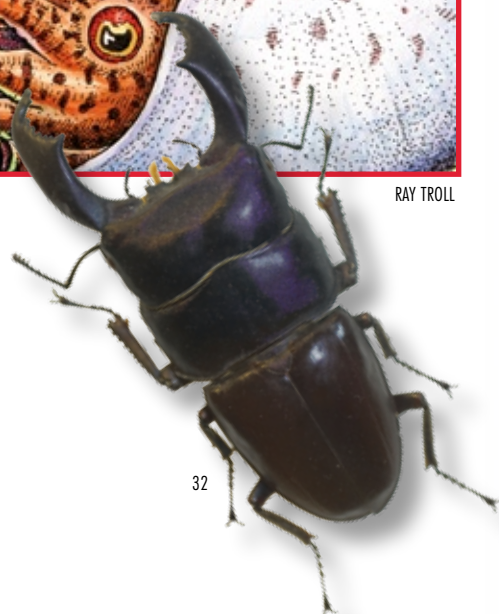
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ON THE COVER

One Small Step for a Fish, One Giant Leap for Fishkind, 1995, pastel on paper. "Every mammal, reptile and amphibian alive on the earth today descended from the lobefinned fish that left the water 375 million years ago." —Ray Troll

ABOVE: *Night of the Giant Ammonites*, 1998, pen, ink, and watercolor on paper



RAY TROLL

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Washington State Magazine
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Washington State Magazine is published quarterly by Washington State University, PO Box 641227, Pullman, Washington 99164-1227. Editorial offices are located at Washington State University, Information Technology Building, Room 2013, Pullman, Washington 99164-1227.

Board of Regents, Washington State University ©2007.

Views expressed in *Washington State Magazine* are those of the authors and do not necessarily reflect official policy of Washington State University.

Alternate formats will be made available upon request for persons with disabilities.

Washington State Magazine is pleased to acknowledge the generous support of alumni and friends of WSU, including a major gift from Phillip M. '40 and June Lighty.

TO SEND THIS MAGAZINE: *Washington State Magazine* is distributed free of charge to graduates, donors, faculty, and staff of Washington State University. With a gift of \$25 or more, you can have WSM sent to someone who is not on our mailing list. For details, go to wsm.wsu.edu/send.html or contact Sherri Peters at 509-335-1686, coug4ever@gocougs.wsu.edu.

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FIRST WORDS

COMBINE THE COURAGE TO QUESTION with careful observation, and wonderful things transpire. Copernicus and Galileo, for example, challenged the dogma of the church to grant us the understanding that we are not the center of the universe.

When Charles Darwin boarded HMS *Beagle* in 1831 to begin his epic voyage, he carried with him the first volume of Lyell's *Principles of Geology*. John Stevens Henslow, his science teacher at Cambridge, had given it to him, but also warned him not to take the book too seriously. The young Darwin also carried the influence of Paley's *Natural Theology* and its insistence on a neatly designed universe. "I do not think I hardly ever admired a book more than Paley's," Darwin later wrote in his autobiography. In terms of truth, however, he was soon to abandon Paley for Lyell.

Besides Lyell's scientific method and Paley's certainty, Darwin also possessed an intense curiosity and the courage, fed by his obsessive observations, to question his conventionally devout beliefs about the nature of things. Paley's insistence on design was eventually discarded by the young Darwin, as his scrutiny told him that the world before him was neither static nor designed.

What is most striking to me about Darwin's *Voyage of the Beagle* is its great beauty, not only of the revelation one senses building beneath his vivid and obsessive observation, not only of his marvelous curiosity and willingness to challenge himself and his beliefs, but also the totally unpretentious beauty of his prose.

Understanding the power of such directness, Ellen Dissanayake '57 wrote in her book, *Homo Aestheticus: Where Art Comes From and Why*, that "Darwinists would do well to woo nonscientists with precise and interesting language." But perhaps it is too much to hope that all it would take for everyone finally to accept the grandeur of Darwin's ideas as readily as we do those of Copernicus and Galileo is simply to let Darwin himself explain, in such beautiful and powerful words, how he changed his mind. Or maybe we *could* hope.

Dissanayake came to Washington State College from Walla Walla in 1953 as Ellen Franzen and became a music major. Along the way she took a couple of biology classes, which planted a seed in her fertile mind. Eventually, she found herself in Sri Lanka, where her developing ideas about art and ritual began to grow.

Dissanayake laid out her ideas in three books, *What Is Art For?*, *Art and Intimacy*, and *Homo Aestheticus*. In essence, she argues that art, or actually what she calls "making special," is an adaptive behavior.

"An ethological view of humans, a view that considers them as an animal species that has evolved to have a particular way of life in a particular environment," she writes in *Homo Aestheticus*, "can suggest reasons why they have art, just as an ethological view of wolves can suggest reasons why they howl, play, and share their food. Art can be considered as a behavior (a "need," fulfillment of which feels good) like play, like food sharing, like howling, that is, something humans do because it helps them to survive, and to survive better than they would without it."

For an interview with Dissanayake, visit wsm.wsu.edu.

—Tim Steury, Editor

Renowned professors.



Research that matters.

Professor Susmita Bose, who earned the prestigious Presidential Early Career Award for Scientists and Engineers, works with nanotechnology to develop bone implants that last a lifetime.

- *U.S News & World Report* named it one of America's top-tier public universities.
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In addition to the benefits you will receive, your membership supports the association's student scholarship program, equity and diversity initiatives, young alumni activities, University advocacy work, and other alumni programs. Members enjoy attending alumni networking and social events in their area and discover how the WSUAA provides them with genuine opportunities to make a positive difference for WSU.

Thousands upon thousands of Cougars and friends of WSU have joined the WSUAA—the fastest-growing alumni association in the Pac-10. We invite all alumni, friends, former students, faculty, and staff to join...and begin enjoying the valuable benefits of membership. Join today by visiting www.alumni.wsu.edu/join or by calling 1-800-258-6978. It truly pays to be a member of the WSUAA.

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WASHINGTON STATE UNIVERSITY
 ALUMNI ASSOCIATION

College recruiting

I FEEL I AM IN A UNIQUE POSITION to respond to your article regarding the college recruiting of prospective Cougs, as (1) I am a high school counselor in the Seattle School District, (2) my son is a senior at WSU and is African American, and (3) I have worked in admissions at both the high school and public college level in the state of Washington over the past 20 years.

I was only concerned about a few liberties taken in the article, one being the statement about high school counselors' priorities, and the other about the current high school student. I am the head and senior counselor at an urban Seattle high school, and many of our students do have serious issues with health, poverty, and a lack of parental involvement. And many of our students come from homes where none has been to college or the family is of recent immigrant status. BUT, let me be clear: It is because of these issues, and the knowledge that college admissions is getting more competitive, that I focus most of my work of educating my students on this whole process of preparation and application to four-year colleges, not less! Counselors are NOT becoming less involved in this particular—it is the opposite, and earlier in the high-schooler's career!

I also would like to comment briefly on three other points:

1. I always recommend WSU to many of my students, because it is the only public college in the state that is on the semester system, and I believe that students are able to get more involved in their classes, get more help from instructors and classmates, and have a better ability to adjust to college and its rigors, in a semester system. Moreover, I believe the writing requirement (for graduation) and the research opportunities are of greater access and success to a well-rounded undergraduate program in WSU's semester system, as well.

2. I have to say, I do miss the recruiters that actually graduated from the college they

are recruiting for! The admissions counselors who actually attended the college they are "working for" have a great, fresh, "real" perspective, and this is more important than you will ever know! School counselors have many questions away from their own students that need to be answered in placing students comfortably, and I have found that graduates of those institutions seem to have more vested in their position and can tell who will really fit.

3. I believe that all of the public colleges were down in applications this past fall as a byproduct of asking for a more competitive applicant, and so many, many of my qualified students opted to go to local community colleges, where classes in the A.A. degree (transfer) programs are now more rigorous, the classes are smaller, and it is less expensive (as a start).

4. I have always, always, always admired WSU's continuing focus on aggressively recruiting ethnic minority students (even in the face of I-200)—the invitations to bring groups over (especially the prospective minority educators' visits), the scholarships available, and the continuing support that my son has received from the Office of Minority Affairs and African American Alumni Association and (current) Student Association.

Keep up the good work!

Dr. Marla S. Stewart
Franklin High School
Seattle

BEING THE FATHER of a high school senior, I've been in a position to watch the recruiting process. As an alum I'm rooting for Good ol' Wazzu, but WSU's efforts seem pretty weak to me. Maybe you just don't see my son as a future Cougar, although he is an honors student, varsity athlete, world champion in Tae Kwon Do, dedicated public service practice-er (Big Brothers, Junior Soccer Coach, etc.).

Material has come pouring in from many other colleges, Oregon State, Oregon, Central, Eastern, Western, Idaho, Montana State, and many, many, many small private

colleges. Multiple mailings, like six to eight pieces from a few.

Despite taking my son to visit WSU on several occasions, including an official campus tour and tour of the School of Communication (he's already doing more sophisticated stuff in high school than it would appear any but senior-level classes offer at WSU in video editing, filming, movie making, etc.), we have received almost nothing from WSU.

Which is all right, he's leaning toward Western anyway. But I just thought you might appreciate some feedback.

He's also gotten nothing from the UW, which is really all right.

Go Cougs!

Dan Huntingford '75
Port Townsend

Thank you, Paul Smith

THANK YOU SO MUCH for writing such a beautiful article about WSU music instructor Paul Smith. He is an extremely talented musician and teacher, and I am glad he is receiving recognition for his work.

Paul Smith was a vital part of my WSU education, because he saw potential in me and encouraged my own musical dream of being a country music singer/songwriter. Although he has a love and understanding of music far more intricate than country, he graciously helped me record my very first country music demo, which was a monumental moment in my life. It was the first time my dreams had become a reality. Paul Smith also picked up on my intense love for songwriting and invited a friend of his (who had written songs in Nashville years prior) to teach our class the craft of writing a song. On the way out of class that day, I overheard many students saying, "That was the best class!" I stayed after and talked to that friend (whose name I sadly cannot recall) and asked him if he still knew anyone in Nashville. He wrote down a name and number for me

and said good luck! That person turned out to be a very crucial member of the Nashville music community who has become a friend and a listening board for me.

What I learned from that class and in the many conversations I had with Paul Smith inspired me to move to Nashville less than two months after graduating from Washington State. I have written and recorded with some of Nashville's most talented musicians and have achieved many of my goals since making that move. I sincerely thank Paul Smith for being such a positive musical influence.

*Melissa Cusick '01
Nashville, Tennessee*

Whither organic?

IN "WHITHER ORGANIC" AND "GETTING THE GOODIES" (WSM Winter 2006-07), the writers correctly mention that organic and conventional farming are in some ways not that much different. Even so, they manage to include the derisive and divisive buzzwords and phrases that seem to pop up whenever a comparison is made. "Harsher pesticides, not healthy for you, large amounts of synthetic pesticides, health of their children, concern about the environment, potentially lower negative environmental impact, contain less bad stuff." Please, have more respect for the evolving farming system that has given us the safest and cheapest food in the world. The writers should have made it clear that organic does not mean no fertilizers or pesticides, but that products used must appear on an approved list. "Pesticide" is a word that has been beat up for years. Most consumers don't realize how many pesticide products are used in and around the house, like pet flea powder, toilet bowl cleaners, and weed-and-feed fertilizer. If penicillin, bacitracin, or any other medicine were used on food crops, the terminology would change to pesticide. Critics of conventional farming ignore

the fact that the average U.S. human lifespan continues to creep upward. Enough rambling, but one more observation: those small, round, blue IQF raspberries on page 28 look more like, well, blueberries.

*Brian Cieslar '73
Lynden, Washington*

WHEREAS YOU NOTE that consumers can have a number of reasons to go organic, you note in the contents page: "Farmers are moving into organic increasingly for one reason. To make money." Then, in your excellent article, you mentioned other reasons farmers go organic because of uneasiness with toxic chemicals. I was so pleased with the article, just had that bit of a problem with the contents page: money is a factor, but it is not the only factor for organic agriculture.

*Robert Jarmick '75
Seattle*

Whither WSU's African Americans?

I COMPLIMENT YOU on the top-notch quality of the publication. You also have excellent writers and photographers. It really is "world class" as far as the quality of the publication.

This letter has to do with the content of the publication. If I didn't know better, I would conclude that there are *no* African American students attending Washington State University except for those who are involved in sports, nor any faculty working there nor any staff, nor any African American administrators. I can always count on the magazine to include either a picture of or some reference to African Americans who are involved in sports, but nothing else!

Since I worked for, retired from, and received a master's degree from WSU, I know for a fact that there are many African American students, staff, faculty, and

administrators at WSU. Can't you find at least one who is doing something worthy of space and a positive story? Are there any students who are doing well academically or something exceptional at WSU?

I happen to know that Dr. Michael Tate is an exceptional administrator who deserves kudos for accomplishments that he has made in a new position. I also know of a staff member, James Bledsoe, who has gone beyond expectations to recruit, maintain, and retain African American students when no one else on campus would help them...

Would it be too much trouble for you to seek out positive stories about African Americans so that those of us [who are] African American alumnae and retirees can say proudly that we are connected to the community at WSU?

Am I correct to assume that you do want African Americans to be a part of the WSU family?

*Ellen G. Murphy, Ed.D. '75
Seffner, Florida*

Bunker Hill

YOUR FALL '06 REVIEW of the book *Idaho's Bunker Hill* was important for me. In the early '50s I spent a few childhood years in Osborn, which is about six miles east of Kellogg[, Idaho] on I-90. We used to marvel at the turbulent waters of "Lead Creek" as it was known in those days, as it flowed through Osborn. I vividly recall watching a mean old man throw a box of unwanted kittens into the creek. The water's color was uniquely gray and unlike other mountain creeks I had seen. In 2005, while headed back to Texas, I stopped in Osborn to see the old house and to get a look at Elk Creek's normal, clear water flow today. I knew some about the mines in Kellogg, but now I must buy the book for the rest of the story! Thanks.

Dwight Dawson '69

ELSON S. FLOYD HAD MANAGED just a few hours of sleep before his cell phone started ringing, kicking off one of the biggest days of his career. It was mid-December, and he and his wife, Carmento, were staying in a Seattle-area hotel after meeting with Washington State University's Board of Regents for a job interview. The regents were scheduled to meet, vote, and announce the hiring of the University's 10th president the next morning. But word of the job offer had hit the papers early, and journalists back in Missouri, where the 50-year-old Floyd was serving as the president of the University of Missouri system, wanted to talk.

Later that morning, the Floyds flew to Pullman, where a crowd had packed into a Lighty Administration conference room to witness the announcement of the new president.

Floyd and his three younger brothers were raised in Henderson, North Carolina by parents who believed a good education would lead to a good life. His family taught him to believe in leadership by example, he said. On this December day, his example was one of confidence and charisma. In the minutes before the meeting, he worked his way through the room, shaking scores of outstretched hands and introducing himself.

Rafael Stone, the regent and Seattle attorney who led the search committee, said the four-month process of finding a new president went more quickly than even they expected, but the result was to capture the best possible candidate for WSU. "Elson was exceptional among a pool of exceptional people," said Regent Connie Niva '62, who sits on a number of citizen advisory boards statewide.



Elson S. Floyd was named the 10th president of Washington State University in December. He and his wife, Carmento, will be moving to Washington from Missouri this spring.

WSU Welcomes a New President

As president of Western Michigan University and the Missouri university system, Floyd has already led two universities that look a lot like WSU, said Regent Laura Jennings, a Seattle-based business consultant. Add to that his previous ties to Washington, and then to meet him in person, it was an obvious choice, she said.

As an undergraduate, Floyd studied political science at the University of North Carolina at Chapel Hill. He stayed on to earn a doctorate in higher and adult education and started working at

UNC in 1978. He moved through the administrative ranks rather quickly, taking on deanships in student affairs and arts and sciences before becoming the assistant vice president for student services for the 16-campus UNC system in 1988.

Floyd is no stranger to Washington. Starting in 1990, he held several administrative posts at Eastern Washington University, serving as executive vice president before leaving to head the Higher Education Coordinating board for the state. Then he returned to UNC Chapel Hill to assume

another senior administrative post. Next he moved to Western Michigan to serve as president, leaving in 2002 for Missouri.

Floyd said he hadn't been looking to leave his job in the Midwest, but when the opportunity to return to Washington came and the search committee called earlier that week, he had to consider it. He said he was attracted by the strong strategic plan President V. Lane Rawlins and his administration had enacted, and by the values and mission of the land-grant university.

At a reception with the faculty in the Alumni Center later that morning, Floyd talked about the responsibility of providing the best service to students, adding to the faculty, and promoting cutting-edge research and scholarship. That afternoon, after meeting hundreds of faculty, staff, and students, and even stopping to talk shop with the mayor, he left for Missouri, where he would make a public announcement of his resignation the next day.

Some campus members said the presidential search progressed too quickly, not offering faculty and staff the time to meet the candidate before he was hired. With a number of other searches going on around the country at the same time, a great pool of candidates had surfaced, said Regent Francois Forgette, a Tri-Cities attorney. WSU's advantage was that it was more nimble, able to act quickly and get the best candidate, he said.

In deciding to hire Floyd, the regents considered his accomplishments and charisma, as well as his passion for leadership, said Ken Alhadeff, chair of the Board of Regents. "It was not a hard choice to make."

— *Hannelore Sudermann*

PANORAMAS

by Hannelore Sudermann

VAULTING AMBITION

DESPITE THE ICY AIR of the late October afternoon, Todd Griffiths strips down to his skin-tight spandex uniform and lifts himself atop a bay horse named Darby. His legs move forward and in one fluid swing are back behind him, pulling him into a handstand, part of a warmup before he gives us a full display of his vaulting skills.

Vaulting is not a widely known sport in America. So tell an equestrian that you know a vaulter, and he'll be impressed. The activity is a combination of gymnastics and dance performed atop a moving horse, so amazing, it's hard to tear your eyes away. The art dates back at least to the Middle Ages, when it was used to display the agility of noblemen and knights.

Today vaulters perform a repertoire of gymnastic moves, including straddle jumps, splits, lifts, backward stands, and leaps, all over the vaulting saddle of a horse

peted on the U.S. team at the World Equestrian Games in front of 6,000 screaming, cheering people in Aachen, Germany. And now he has his sights set on the World Games in 2010.

He was born to horses, having grown up on a ranch in Montana. "I don't know why, but I have always tried to do tricks," he says. On long cattle drives, he would kneel or stand in the saddle. The result was usually disappointing. "The horse would just stop," he says. "It couldn't figure out what I was doing."

At five-foot-five, Todd is a wiry guy and a natural at gymnastics. He pursued the sport through high school and into college at Brigham Young University. He discovered vaulting when a classmate urged him to try some moves atop a horse. Vaulting horses are trained to have a gymnast on their backs, and when guided by a longeur who is crack-

he could do right away. "But some things were more difficult than I expected," he says. "I tried something as simple as sitting on a horse sideways, and I fell right off."

But he took to the sport, continued it through college, and then through his first years studying veterinary medicine at WSU. He found a practice partner in Darby, an older resident of Wonder Stables in Pullman. Though the horse had never been vaulted on before, he had a steady gait and an easy temperament, ideal qualities for the work.

Our afternoon watching Todd vault comes during a break from his studies. He plans to become an equine surgeon. He traded his lab coat for his spandex to give us a firsthand view of the sport. Having warmed up a little, he leads the horse into a small, fenced arena and hands the line to the horse's owner, who has

to the saddle, patting the steed's neck. The longeur's whip cracks, urging the horse to speed up.

Todd stands again, bends at the waist, puts his right hand on the horse's back and lifts his left leg skyward. He holds his pose as the horse moves forward.

Next, he tries a handstand on the arms of the vaulting saddle; then he bends his elbows and curves down into a perfect C over the horse's neck.

For his big move, he has to forget gravity. Standing on the saddle, arms in the air, he hops a little, as the horse sinks in the canter. His arms curve to the front, his knees bend, and then he springs high, free of the saddle, about four feet off the horse. He does the splits, hangs for a second, and then descends, landing softly, sliding his feet down the sides of the horse. The photographer and I gasp. Todd

cantering in a 15-meter circle.

A third-year veterinary student at Washington State University, Todd is one of the nation's top vaulters. Last summer he com-

ing a whip and pushing them to canter in circles around the arena, make for a moving platform. "I had to go try it," says Todd.

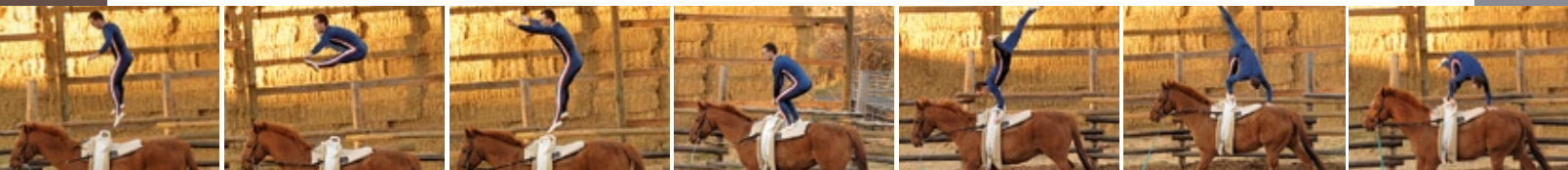
Some moves, like handstands,

agreed to longe for him.

As Todd stands, his knees bend to accommodate Darby's movements. He throws his arms wide, holds for a few seconds, and then jumps down

looks over and grins. "Sometimes it feels like you're getting bounced out of control," he says later. "But sometimes it really does feel like you're flying."

Photography by Robert Hubner



GAYLEN HANSEN:

THREE DECADES OF PAINTINGS



Kernal with Fire and Wolves, 1984
Oil on canvas, 60 x 72 in.
Collection of Heidi Oberheide



Contortionists, 1990
Oil on canvas, 60 x 72 in.
Collection of the artist



Blue Fish, 2006
Oil on canvas, 72 x 108 in.
Collection of Scott and Laurie Oki

It's hard to imagine that at one time Gaylen Hansen painted conventional abstractions—nice but, well, abstract and unfamiliar—nothing like the tall tales he's painted for the past 30 years. That's when he joined the Kernal and began his journey through a magical Palouse populated with magpies—lots of magpies—bison, trout, lots of dogs, and wolves. And grasshoppers. Big, red grasshoppers. And tulips. Hansen, who retired from Washington State University in 1982, continues to paint in Palouse. A 30-year retrospective of his work, organized by the Museum of Art in Pullman, will open simultaneously at the latter museum and the Northwest Museum of Arts and Culture in Spokane. The exhibit will then move on to the Seattle Art Museum in fall 2007.

FEBRUARY 16–APRIL 8

WSU MUSEUM OF ART *pullman*

NORTHWEST MUSEUM OF ARTS AND CULTURE
spokane

FALL 2007 SEATTLE ART MUSEUM

PANORAMAS

JUST LIKE IT WAS YESTERDAY

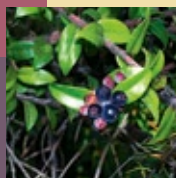
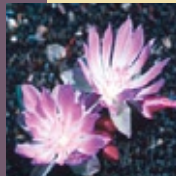
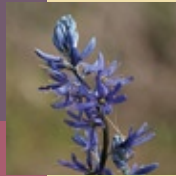
"We were living a good life," said Albert Redstarr Andrews in a meditation concluding the second Plateau Conference, "and we were disturbed." What might be taken as gracious understatement also resonated with profound loss.

In spite of a generally liberal sensibility and Native great-grandmother, I confess there have been times upon hearing Native Americans speak of the injustices of manifest destiny and conquest, I've wondered when they will finally accept, no matter the past injustice, that this is simply the way things are. Having attended the conference in October, however, I find I am still capable of learning.

The focus of this year's conference was the Palúus people, who had inhabited the Palouse region, wintering along the Snake River. The Palúus never signed a treaty and were thus known as the "renegade tribe," which is the title of the history of the Palúus people by former Washington State University historian Clifford Trafzer and Richard Scheuerman. Scheuerman earned his master's degree in history from WSU and has written many books about regional history. Both men participated in the conference.

Soy Redthunder, from the Colville Reservation, Chief Joseph Clan, opened the conference by having the members of long houses present join him in a song. The song, like others throughout the conference, was in a minor key, prayerful, and mesmerizing. Ron Pond and Palouse Falls Drum followed with an honor song.

Because they never signed a treaty, the Palúus were never assigned reservation land and were largely dispersed. Many of the Colville Federated Tribes have Palúus ancestry, as do other Plateau peoples.



Foraged foods:

IN A WOODED SPOT a half-mile from Washington State University's Pullman campus, an older woman with long braids and an

is how it has been done for centuries.

Roasting salmon is a time-consuming effort. You have to go slowly, but the result is a rich, smoky, alder-flavored pink fish. Delicious even without salt. Using the right sticks is key, said Wilfred Jim, as he scraped them clean afterward. Ironwood, because it gets harder as it ages, is ideal. Some of the



ROBERT HUBNER

apron emblazoned with the words "got buns?" tended an alderwood fire. Geraldine Jim, a salmon expert from the Warm Springs Reservation in Oregon, used the back of a pickup truck as her staging area. She threaded the salmon halves lengthwise onto long, stripped sticks of dogwood and

sticks that he and Geraldine use are 20 years old.

The Columbia plateau has always provided its residents with a rich



variety of foods, and salmon has been at the heart of it, says Mary Collins, associate director of the WSU Museum of Anthropology. "That's no surprise, considering that environmentally it is extraordinarily diverse," she says. "We



ROBERT HUBNER

ironwood. While the fish roasted, she circled the fire, running her hand up the skin side to feel for doneness. She pointed out how a half-section of the fish is threaded down the stick, the thin tail end at the top, furthest from the fire. Note how the tail hangs over the top of the stick, she said, so the salmon doesn't slide down into the flames as it cooks. This

have everything from desert to cedar forests. And among its Native American inhabitants there has been a strong tradition of cooperation in terms of access to food resources from both trading relationships and family relationships."

In that spirit of cooperation, volunteers and organizers spent months gathering the foods to

SERVING UP A TRADITIONAL MEAL FROM THE COLUMBIA PLATEAU

be served at the campus feast during the Plateau Indian Conference at WSU last fall. Members and descendants of many of the plateau cultures including the Cayuse, Umatilla, Nez Perce, Yakama, and Walla Walla, came together to share in the rich variety of foods that have a home in their histories.

To prepare for the meal, they dug camas

responsible for collecting them. The men brought out salmon and dried venison. Then came the women serving camas roots,



AUSON MEIER



ROBERT HUBNER

root, bitterroot, and Indian carrot from around the Palouse. Some hunted and dried deer meat. Others picked and

the bitterroot, the chokecherries and the berries.

The first course, though, is always water, said Redthunder, as the servers placed filled pitchers on a table. "It's the source of life."

So alongside huckleberry pie and roasted camas root, several

preserved berries and collected moss from the forest. The moss is a special treat, which takes some doing to prepare. It has to be cleaned of sticks and pitch and then baked for a very long time, said Sharon Redthunder of the Colville Reservation as she helped set up the meal. The final step is to cook it into a pudding, she said, lifting a lid to reveal a black, wet mass.

More than just the food, the tradition comes in the serving of it. The dishes were presented in the order of the season in which they were ripe and ready, and by the people who were

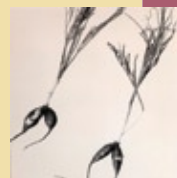
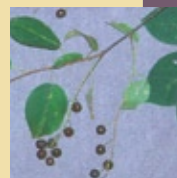
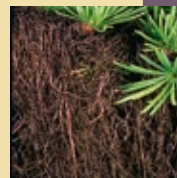


COURTESY NPS, NEZ PERCE NATIONAL HISTORICAL PARK — SPALDING, ID

hundred guests had a generous serving of tradition.

—Hannelore Sudermann

Large photos: Page 12, top to bottom: Geraldine Jim roasts salmon for the Plateau Conference at WSU; white camas root; roasting salmon. This page, top to bottom: A view of the Palouse; black camas root; Annie Yellow Bear dries and pounds camas root, Kamiah, Idaho, ca. 1890. Small photos: Clockwise, from bottom of page 12: Clayton J. Antieau, Kathy Ahlenslager, Will Simpson, Stephen Sharnoff, and Oregon State University (last two photos).



Carrie Schuster, a Palúus elder who now lives in Yakima, lived on her family allotment on the Snake until they were finally driven off in the 1950s. "We still talk about coming home," she said.

In fact many of the Palúus were returned home recently, through a process euphemistically termed "repatriation." Last spring, Palúus remains that had been stored in museums, including those at the University of Idaho and WSU, were reburied, on a bluff above the Snake. It was a momentous, if partial, step toward rectification.

"We need to get our people back in the ground where they belong," said a participant in a conference workshop titled, "The Palúus Rest Again."

"They shouldn't be sitting on shelves," she said.

Later, Barbara Aston, interim director of the Plateau Center and coordinator of the conference (and a member of the Wyandotte and Seneca tribes), told of reburying some of her relatives and how "time fell away."

Not only did I get a basic lesson in Plateau culture, but also a good solid glimpse of an entirely different sense of time and place. Or rather, a different sort of memory. One that compresses time and melds it inextricably with place and kin. It is a memory that cannot forget, for it is cultural identity.

This sense of reclaiming time and history permeated the conference, with sessions on native language, Chief Kamiakin, and native people becoming scholars of their own history blending with drumming and singing in sorrow and determination.

Earlier, Soy Redthunder had noted that October 5 was the anniversary of Chief Joseph's surrender in 1877.

"For our people," he said, "it was just like it was yesterday."

—Tim Steury

A WEEK IN MALAWI

IT IS A LONG WAY from Pullman to Lilongwe, Malawi, and our route took us to Seattle, Amsterdam, Johannesburg, and Harare, before ending in Malawi's capital city on June 14, 2006. Our Washington State University entourage included Rafael Stone from the Board of Regents, Lance LeLoup, associate vice provost for international programs, and Chris Pannkuk, director of international research and development.

MALAWI IS A RELATIVELY small East African nation bordered by Zambia, Tanzania, and Mozambique. The per-capita income is one of the lowest in the world, and life expectancy has dropped several years in the past decade due to the prevalence of AIDS. Looking at the statistics was a gloomy experience, and I somehow expected that feeling to be reflected by the people I met. But it wasn't. Everywhere we saw colorful dress, strong and vital people, and smiling and waving children. You get the feeling that children are everywhere. In this seriously overpopulated country, women bear an average of six children and, given the low life expectancy, the population is very young. One of our sources estimated one million orphans in this nation of about 11 million people.

WSU AND TOTAL LAND CARE (TLC), an organization that grew out of our research, make up a kind of research and extension service in Malawi. Dr. Trent Bunderson is a WSU faculty member, and his able colleague, Zwide Jere, is the director of TLC. They are currently advising villagers in dozens of locations around the nation and wanted us to see as much as we could in the little time available.

OUR FIRST STOP was at a village where we had multiple projects. The one they wanted us to see was the development of mushroom houses where they cultivate valuable oyster mushrooms. About 20 beautiful women, colorfully dressed in their native wear, met us. They approached us as a group and, in beautiful harmony, sang songs of greeting. They were joined by the men and children in one of the most moving serenades I have ever heard. Several young men from TLC and a representative from the ministry of agriculture also met us here. In fact, at all of the locations we were joined by district government representatives as well as what was translated as "traditional authorities"—the village and tribal organizations that still control 80 percent of the land in Malawi. In some places we actually had the tribal chief, often presiding over more than a hundred villages. In other words, our visit was a *big deal*.

MOST OF THE VISITS followed a pattern. First, we would be greeted by singing and children who wanted to see us up close. Then we would gather and listen to the people of the village or the tribe tell us about what they were doing. What *they* were doing! Not what someone was doing for them! As people explained what they were doing and how it was changing their lives, we all experience a powerful sense that something very important was happening here. We visited one project, for example, where the use of treadle pumps to bring water up the hill from the river has made them less dependent on the rains, allowed for an additional crop, and opened up the opportunity for many new products. (See wsm.wsu.edu/stories/2006/August/Malawi.html.) Trent Bunderson estimated that their annual production had doubled. A village leader told us they had started with 75 families on this project and now had over 500. Then this leader asked us for more help to move to the next level of technology.



Top to bottom: President Rawlins with Zwide Jere, director of Total Land Care, a project which WSU is involved with in Malawi. Trent Bunderson, WSU faculty member, works with Jere. Some of the many Malawian children who greeted the WSU visitors.

ONE OF OUR MOST impressive visits was to a rice field in one of Malawi's poorest regions. No one had shoes, and the children were in tattered clothing. But there was such excitement and hope! They told us about how they had learned that after they harvest the rice, there is enough moisture in the soil to raise a crop of beans, something they had never done before. And, as a bonus, the beans fix nitrogen in the soil so the next rice crop is even greater.

OVER THE NEXT few days we heard many stories about transformation. In one of the most simple but dramatic, we were taken inside one of the small houses and shown a little brick-and-clay stove that can be easily made from local materials. The woman told us with great passion how this had improved her life. The key is that she can now cook for 10 days with the wood it would have taken to cook for only one day on an open fire. The biggest impact of this may be on the children, who can now go to school rather than spend their days collecting firewood.

OUR LAST VISIT was to an area where several villages are working to reforest the hillsides. We were met by hundreds of people singing and making us welcome. We saw some of the forest and heard all the speeches from leaders about how this was important to their future. As we looked at this assemblage of proud people who are changing their lives through education about new technologies, we were all deeply touched.

WSU, MALAWI, AND THE WORLD are looking to the Trent Bundersons and Zwide Jeres for a new vision of sustainability in the face of starvation, overpopulation, and disease. This trip changed the way I see a lot of things, and some things that I once thought intractable now appear approachable.

— V. Lane Rawlins



COUGAR FOOTBALL



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by Cherie Winner

Check out the new building at Washington State University's Extension campus in Puyallup. The foundation is cracked. The front stoop tilts toward the house. Window flashing was installed wrong or not at all, the attic insulation runs right up against ventilation holes, and there's a persistent leak around the toilet.

Contrary to what you might think, the designers and builders of the 1,152-square-foot house made it that way on purpose.

"We were told the other morning that we were good at doing things wrong," says construction maintenance mechanic Ron Froemke, who helped build the house. "It felt like a low blow to me, but I guess if everyone's happy ..."

"Everyone" in this case includes pesticide educator Carrie Foss and the advisory committee for WSU's structural pest integrated pest management (IPM) program. A few years ago the committee suggested building the house as a teaching aid for structural pest managers and inspectors. The "Structural Pest IPM Facility," as it is formally called, will give students a chance to see for themselves a variety of poor building techniques and the pest problems they help create.

"Conductive conditions" is a key concept, says Foss. Poor construction doesn't

always lead to pest problems, but it does create conditions, such as excess moisture, that encourage pests and give them a foothold within the home. Subterranean termites, carpenter ants, and the fungus that causes wood rot are just a few of the pestiferous guests Foss expects to see in the house eventually.

Foss says many of the problems that plague homeowners aren't easy to find. They sprout behind walls, under floors, in cracks and corners. In their early stages they can be hard even for experienced inspectors and pest pros to detect. How-to books, diagrams, and checklists can help, but there's no substitute for the real thing.

"What's of value here is being able to see where the problems—that might not be obvious—are going

to be," says Foss. "To know where to look, and what clues to see."

Foss and her crew will monitor the house over the next few years, and when they find damage in out-of-sight places, they'll make it easier to view by replacing portions of walls or flooring with Plexiglas panels.

The house will be officially dedicated this spring, but it made its instructional debut last October. In a weekend workshop for 25 pest managers from six western states, the house was a hit. Until now, students in this region haven't had the chance to see many of these problems before they get out into "the real world." Similar facilities have been built in the eastern half of the country, but Puyallup's "mildew manor" is

Welcome to Mildew Manor

(And you think *your* house needs work)

Illustration by David Wheeler





NAME: Robbie Cowgill

POSITION: Forward

AGE: 20

HEIGHT: 6'10"

TARGET WEIGHT: 210 pounds

**DAILY CALORIES REQUIRED
TO MAINTAIN WEIGHT:**
6,000-7,000

TYPICAL DAY'S DIET

BREAKFAST:

Two or more biscuits with
gravy, three scrambled eggs,
three pieces of bacon, glass
of milk, glass of water.

SCHOOL-DAY SNACKS:

Peanut butter crackers, cheese
crackers, Ritz bits. They're at the
ready in his backpack so he
can eat during class.

LUNCH:

Meat ("steak is good"), two
or three baked potatoes with
sour cream, butter, and cheese.
Milk. No dessert if he has
afternoon practice.

EMERGENCY SNACK:

Tray of cinnamon rolls or a
Tony's Frozen Pizza.

DINNER:

Chicken Parmesan, three corn
dogs, two baked potatoes with the
works, pea-and-corn medley, one
piece of German chocolate cake.

POST-GAME MEAL:

Pizza. "A whole pizza."
And two Gatorades.

LATE NIGHT SNACK:

Pudding and can of soup.

7,000 CALORIES

6,000 CALORIES

5,000 CALORIES

4,000 CALORIES

3,000 CALORIES

2,000 CALORIES

1,000 CALORIES





Digital artwork created by Annette Ticknor '07 for the wine label on "Artist Expression 2007," a Woodward Canyon special spring release.

Viticultural Art

Wine-By-Cougars, the precocious young wine club sponsored by the Washington State University Alumni Association, is adding art to its viticultural appeal. The wine club will offer a special "Artist Expression 2007," a union of student art and alumni winemaking.

The wine club approached the digital design class taught in Fine Arts and asked students to design a wine label for a special spring release from Woodward Canyon, owned and operated by Rick Small '69. Design students were instructed to reflect viticulture and the land-grant ideal on their labels. The label chosen is by Annette Ticknor '07, a communication major and fine art student. (Full disclosure: Ticknor is an intern with *Washington State Magazine* this semester.)

Wine-By-Cougars was launched in May 2006 and has 200 members in 14 states. Members receive quarterly shipments of Washington wine with Cougar connections. Selections have included wines from Gordon Brothers, Columbia Crest, Whitman Cellars, Kestrel, and others. So far, 45 winemakers, vineyard managers, and winery owners are participating in the club.

A service of the Alumni Association, Wine-By-Cougars is owned and operated by the Walla Walla Wine Club and managed by Cassie Rothstrom '87.

— Tim Steury

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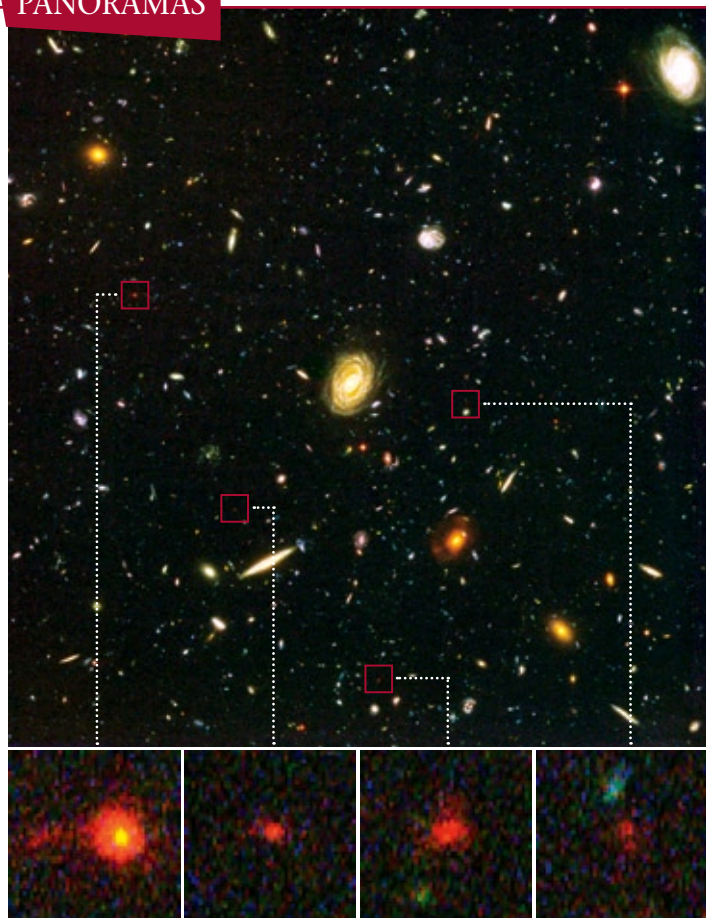
- Astronomy
- Care of Animals
- Chemistry
- Companion Animals
- Digital Comics
- DNA & Genes
- Fashion Design
- Human Anatomy
- Jazz Improvisation
- Monsters in Literature

- Nanoscience
- Philosophy through Films
- Photography & Web Design
- Robotics
- Study of Bats
- Veterinary Science
- Video Production
- Writing Poetry

**7th-9th
Grades:
July 15-20**

**9th-12th
Grades:
July 22-27**

WASHINGTON STATE
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IMAGES COURTESY NASA

This section of the Hubble Ultra Deep Field includes galaxies of various ages, sizes, shapes, and colors. The smallest, reddest galaxies (in boxes) may be among the most distant known, existing when the universe was just about 800 million years old. The nearest galaxies—the larger, brighter, well-defined spirals and ellipticals—thrived about 1 billion years ago, when the cosmos was 13 billion years old. The image required 800 exposures taken over the course of 400 Hubble orbits around Earth.

The Longest View

Researchers working with images from the Hubble Space Telescope recently extended their view billions of miles into deep space—and billions of years into the past. Using the Advanced Camera Survey that was installed on Hubble in 2002, the researchers peered at an area called the Ultra Deep Field. They found more than 500 galaxies that were actively forming their stars almost 13 billion years ago.

“This represents the Hubble Space Telescope staring at one little patch of sky for about a month,” says Washington State University astronomer John Blakeslee. He was a member of the team that processed Hubble’s raw images and analyzed the resulting pictures. The most distant galaxies ever observed, they are providing scientists their closest look yet at how galaxies formed early in the history of the universe.

For more information on this and other Hubble-related research, go to either www.nasa.gov/hubble or hubblesite.org.

— *Cherie Winner*



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new wine club
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*"Art can be considered as a behavior... like play, like food sharing,
like howling, that is, something humans do because it helps them to
survive, and to survive better than they would without it."*

Homo Aestheticus: Where Art Comes From and Why
Ellen Dissanayake '57

On the steamy edge of the Australian rainforest, biologist Michael Webster studies the secret world of the red-backed fairy-wren and has found a surprising answer to the seeming incongruity between conspicuous plumage and song and how these traits contribute to survival.

art & evolution

BRIGHT PLUMAGE AGAINST GREEN FOLIAGE: THE GRANDEUR AND BEAUTY OF EVOLUTION

by Michael Webster

Close examination of the socially monogamous red-backed fairy-wren (facing page) is revealing that drabness and bright coloration each has its place in our revised—and spicier—understanding of avian relationships and survival.



I OPEN MY HAND and the little wren, momentarily startled by its newfound freedom, flutters quickly to the nearest bush. I stand in the hot tropical Australian sun and watch as the tiny bird flits from branch to branch, a black- and red-feathered jewel. I have just captured this little bird, collected a page full of data and a blood sample for genetic analysis back in the lab, and added some colored bands to his legs so that we can identify him later. The bird pecks quizzically at its leg bands and then lets forth a loud, twittering song. His mate responds quickly, singing her own song and then flying over to join him in the shrub. They hop around each other excitedly, and I smile as I watch them flit away and disappear into the eucalyptus forest.

I have come here from Pullman to the steamy edge of the Australian rainforest to study these little birds, known locally as “red-backed fairy-wrens.” Working with my students and other collaborators, I am examining some of the mechanisms that help drive the evolutionary process. For years we have worked to understand how mating behavior can lead to the evolution of conspicuous traits, such as bright plumage and song, which are ubiquitous in the animal kingdom, yet puzzling, since they are likely to attract the attention of predators and so decrease survival. This puzzle is particularly vexing in birds such as fairy-wrens, which are socially monogamous and seem to show little if any competition for mates.

Our work has revealed a secret world among these little birds. Genetic analysis has shown that females often mate with males other than their social mates and that brightly colored males have a strong advantage in this hidden sexual competition. Thus, males who are more brightly colored sire more offspring, spreading more genes to the next generation, and coming out ahead in the game of natural selection.

But as in any good science, answering one question opens the door to a host of others. Why do females prefer brightly colored males? Why do some males nevertheless have drab coloration? And might this hidden reproductive competition be important

somehow to the process of speciation—that is, the process by which a single species evolves to become two separate and distinct species? We are now expanding our research to address these questions, combining detailed observations of birds in the field, experimental manipulations of their family groups, and intensive genetic analyses in the laboratory. As bizarre (or humorous) as it may seem to my friends and family, I have devoted much of my professional career to understanding the sex lives of these funny little birds.

But why am I doing this? Why do I return to these tropical Australian forests each year to face—or at least ignore—the many snakes, insects, and horrifyingly large terrestrial leeches? What compels me to spend so much time delving into the breeding behavior and genetics of these little birds?

And I'm hardly alone. Why have so many other scientists, many at Washington State University, devoted their careers to studying the genetics of snails and lizards, the evolutionary history of various plants, the development of beetle larvae, and a host of other such questions?

Part of the answer is that the research questions themselves are important. Evolutionary biology is a thriving discipline that involves thousands of scientists across the globe. Evolution is the unifying theme that puts the “why” into our understanding of biological systems. It tells us why organisms look and act and function the way that they do. It tells us why we have the diversity of life on earth that we have, and why so many species, like the dinosaurs, are no longer with us. And it tells us about our own family tree and where humans, as a species, came from. Indeed, as the evolutionary biologist Theodosius Dobzhansky put it several decades ago, “Nothing in biology makes sense if not in the light of evolution.”

But, truth be told, that is only part of the answer, and none of that is what I am thinking about as I watch my little wrens flit away. Instead, I am thinking about how pretty they are, bright plumage against the green foliage, twittering songs bouncing off the leaves. This, of course, is why I am here and why I have devoted my career to studying behavior and evolution—I am fascinated with these little birds and want to understand as much as I can about them. This fascination is shared by the students working with me here in Australia. Around the dinner table at night we chat about the birds, what we saw them doing that day, and also any other interesting little tidbits we observed, like the large carpet python hunting through the brush this morning. To be sure, we also talk a lot about science—the data we are collecting and the ideas that we are testing—but a good deal of our time is spent just chatting about our many non-human neighbors in the forest that surrounds us.

This fascination with nature is what drives and compels evolutionary biologists. There is little fame in this line of work, and little fortune. Rather, what drives people into this line of work is equal parts innate curiosity and deep appreciation for nature.

Evolutionary biologists—indeed most scientists in general—are obsessed with solving questions about nature. Some of these questions and puzzles are big ones, but for the most part they are small questions about tiny aspects of nature. The answers to these many little questions, though, add up to a larger understanding of nature and how it operates.

Charles Darwin, the original architect for the modern theory of evolution, himself typified this mixture of deep curiosity and love for nature. As a young man Darwin set out on a five-year voyage around the world, during which he occupied himself with observing, describing, and thinking about what he saw. His observations led to questions and puzzles. Why were so many fossil animals similar to, but slightly different from, living organisms in the same areas? Why did the depth of a flower so closely match the tongue length of its pollinator? Why did the birds on an island resemble each other in so many ways except size of the bill? These observations and questions led Darwin to formulate the Theory of Evolution by Natural Selection, and biologists to this day continue to uncover the details of that process. Throughout the rest of his career Darwin devoted himself to studying the flowering habits of orchids, the lives of mollusks, the effects of worms on mould, and the expression of emotion in animals. Throughout it all, he was driven always by that innate curiosity and love.

Some have told me that this evolutionary explanation robs nature of beauty by reducing it to a cold mechanical process, “red in tooth and claw,” as the saying goes. This attitude puzzles me, because all the evolutionary biologists whom I know—and I know many!—are driven by a love for nature, and to them nothing is more exciting than to uncover some hidden aspect of a natural system. Darwin himself probably best described this fascination that evolutionary biologists have with the natural world when he wrote these closing lines to his first book on evolution, *The Origin of Species*: “There is grandeur in this view of life, . . . that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.” ●

Michael Webster is an associate professor in the School of Biological Sciences. His research focuses on the evolution of sexually elaborate traits, such as bright plumage, and reproductive behaviors in wild birds.



TREVOR QUESTED

ray troll

A STORY OF FISH, FOSSILS, AND FUNKY ART

by Hannelore Sudermann



Top: Ray Troll stands in front of *Kings*, a mural that he painted in 1998 for the lunchroom at Ketchikan High School. Playing with the theme of the school's salmon mascot, each square represents a different king. The first student to name all the kings won a scholarship. **Facing page:** Troll peers from behind a poster advertising his "DaVinci Cod" t-shirts at a Ketchikan gift shop.

RAY TROLL '81 SEES PLESIOSAURS playing in the clouds. He pictures nurse sharks circling him in his hospital room, and he spots trilobites in the desert sky. He calls Charles Darwin "Chuckie D" and paints pictures of him hugging fish and driving dinosaurs around in an "Evolvo."

He sees these things and he wants you to see them, too. Nature, history, prehistory, and evolution—they're all around you. "Just look at them," he says, whether he's holding a pencil, pen, paintbrush, or a guitar.

One of his most recent drawings, a pastel he has titled, "The Paleohunter's Den" is at first view a mundane picture of a guy in a plaid shirt watching TV. But mounted on the wall behind him are the deer of prehistory, fantastic, but real. One antler, twisted antlers, antlers branching out from the snouts, they're all based on renderings of deer fossils that Ray unearthed in an old book. "What do you think?" he says, holding the picture out. "Look at that one."

Ray Troll is a primate of the subspecies *Homo sapiens sapiens*.



If he were sub-subspecies, he might be categorized as a popular artist, a wit, a fish-lover, or best yet, a scientific surrealist obsessed with evolution. The 52-year-old bearded male admits that humans are just a speck in the history of life on earth. While they figure into his artwork, they're hardly the most interesting, he says. But it's fun to mix them in with the ancient sharks, the ammonites, and the waterscapes.

His habitat is Ketchikan, a southeast Alaska city snugged up between a rainforest and the salty water of the Tongass Narrows. If you look from the window of his studio over the real bones and fossils and small plastic dinosaurs that line the sill, you can see the blues and greens and grays of the far Northwest, the colors that resonate in his art.

In the past few years, Ray has traveled the West with a paleontologist working on a book about the fossil highlights of America. He has also done artwork for an interactive exhibit at the Smithsonian, floated the Amazon in search of exotic fish, and lectured on campuses around the country, reaching out to

science students with his art and to art students with his love of science. In the past few months he has spoken at Cornell University about “The Artist’s View of the History of Life,” written a song about evolution titled, “The Devonian Blues,” and come up with a “DaVinci Cod” t-shirt design, a bestseller among both Alaska tourists and Dan Brown fans.



DIGGING DOWN TO THE DATA

Ray is constantly glancing up to see if you get his joke, or like his work. When riffing about life in Ketchikan—"With all the rain, it's the wettest you can get without actually being underwater"—he tucks his hands into the pockets of the fleece jacket bearing the Soho Coho logo of his local gallery. He unzips it, revealing a yin/yang salmon t-shirt from his collection, as we sit down to breakfast at the Cape Fox. The lodge towers on a cliff above the old part of town. "I'm an omnivore in a big way," says Ray, dropping the napkin in his lap and ordering the biscuits and gravy. Through the gray drizzle out our window, we look down on Ray's city of 23 years. He points toward the dock where he had his first job as a fishmonger, and up north a bit to the cannery where he had his first studio. It was there in the early 1980s, printing up "Let's Spawn" t-shirts with salmon running across them, that the odd fish artist with mass-market appeal was born. The shirt sold out in two days.

Later he made his most famous t-shirt, “Spawn Till You Die,” with a skull and two mature salmon as crossbones. The shirt is standard apparel among motorcycle riders, teenagers, and fisherfolk. Seeing what caught on, Ray quickly enhanced his t-shirt empire, diversifying into posters, postcards, paintings, and eventually whole books filled with his art.

Looking to the community around him, he started what he calls “culture-jamming,” borrowing from his environment, the fish, the fishermen, the seascape, and the local Native American imagery, and then putting in touches of Brueghel and Bosch.

As he developed his Ketchikan style, he began to understand more about his environment. His drawings became more accurate. His early red snappers, for example, didn't have the right number of fin rays. They were "cartooney a little bit," he says. Now his fish are close to exact almost down to the number of scales. "It got to be fun to blow people's minds with what was really real," he says.

For Ray, the coolest reality is evolution.



Above: *Drivin' with Darwin* (1998), pen, ink, and watercolor on paper. **Right:** Troll's *Dancing to the Fossil Record* exhibit in 1998 at the Academy of Natural Sciences in Philadelphia. **Opposite page,** Troll holds a ratfish specimen on the deck of his studio overlooking the Tongass Narrows.

Charles Darwin got it after five years aboard the *HMS Beagle* and a trip to the Galápagos. He came up with the theory of evolution through natural selection, and later, in *The Descent of Man*, published his findings that man and ape descended from a common ancestor.

Most people get the connection back to the apes, but how many take it further, asks Ray. How many of us can name the steps that connect the earliest life forms with *Homo erectus*? "How about all the stuff in between?"

For Ray Troll, a better understanding of the in-between came just a few years ago at a natural history museum in Los Angeles. A scientist there explained how *Homo sapiens* were vertebrates descended from fish and that our hands are an evolved version of fins. "That was my epiphany," says Ray. "All of us with backbones are basically the fish group," he says. "Wow. Then you start seeing the world in a different way."

He found himself making the connection between man and fish again and again. "You learn these things in biology classrooms, but a lot of times science is so detail oriented, the bigger realizations are not so apparent," he says.

He wanted to explore it further. In 1994 he and writer Brad Matsen decided to tackle the subject with their book, *Planet Ocean*, tracing life on earth over the past four billion years. They filled the book with a summary of prehistory in plain English and Ray's fanciful drawings; they told of the trilobite, the first creature to have eyes, and the lobe-fin fish, the first vertebrate to get oxygen from the air. In his art for the book, Troll took the fish out of the water and the fossils from the strata. In Ray's

world, primordial soup comes in a can, and the fossil record is "a dusty old album with lots of skips and scratches with a great beat—easy to dance to." Maybe evolution would be a little less scary if only we could see how fun and amazing it is, he says.

"He gets what paleontologists get," says Kirk Johnson, curator at the Denver Museum of Natural History. "He gets that these things are real, and cool, and weird."

NATURE AND NURTURE

It would be hard to define Ray's childhood because, he admits, he's still in it.

But back when he was shorter and less hairy, when he was younger and living with his mother and father and five siblings, he would wander through his neighborhood and pick up a rock, saying hopefully, "Maybe it's a dinosaur bone." It never was.

"My first love in life was dinosaurs," he says. So he drew them. Obsessively. "Then it was battle scenes. Then airplanes. Then dinosaurs again." He and his brothers would "play museum," setting up bones and arrowheads for display and then charging their friends for a tour.

After high school in Wichita, he studied art at nearby Bethany College, a private Lutheran school where he had his first fish encounter. In a pottery class, he hit upon the phrase "plenty of other fish in the sea." Creating raku-fired vessels with the fish and the phrase gave him a chance to get in touch with the natural world and mix in a little lesson about the universal search for love and romance.



SEAN DURAN

After college, Ray moved to Seattle. It was the late '70s, and he found plenty of music, couch surfing, and work in a variety of jobs. He waited tables at the Aurora Tavern, answered calls for the IRS, and was a silk screen technician at Silver Screens on Capitol Hill, where he and his co-workers made thousands of t-shirts announcing "KISW Rock!" After a few years he had enough of living as a loose end, and decided to formalize his life as an artist.

What drew a kid from Kansas to Washington State University? Maybe it was the similarities of the landscapes, all the wheat fields, he says. And then "there was kind of a vibe to the place that clicked with my sensibilities." He loved the close interaction between the instructors and students. They hung out together, posed for Ray's photos, and wrote songs with him. Ray rattles off

their names—Gaylen Hansen, Bob Helm, Arthur Okazaki, Francis Ho. And, of course, Jim and Jo Hockenhull, close friends, and founders of that not-so-well-known band, Zuzu and the Robot Slave Boys. “We were huge,” says Ray. “We played the CUB.”

The early 1980s was a great time to be part of the art department, says Jo Hockenhull, who was one of Ray’s advisors. Back then, the scene was pretty open—students and faculty collaborated on projects, performed together, and often staged theme exhibitions that they pulled together in just a couple of weeks. “There was a lot of egging each other on to do better, be weirder,” says Hockenhull. Ray was right in the middle of it, one of the hardest workers, accomplishing and producing a lot of material.

One of Ray’s favorite places in Pullman was the Conner Museum in Science Hall. He loved to go look at the specimens. He was delighted to discover that he could check out an eagle or a jar of frogs. “The scientists were over there putting cool stuff in jars and putting them up on shelves,” he says. That’s just a waste. “I would go over and get a roomful of magpies and bring them back to my studio.”

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The one scratch on the record of his time in Pullman was the C he got from his drawing instructor, Pat Siler. “It really did bother me,” says Ray. “But it was good for me.” It wasn’t that Ray wasn’t doing the work. The critique was more about his line quality. “Art is hard to grade. It’s really a squishy, intangible thing,” says Ray. “But that’s the challenge for a professor, finding something that causes you to focus your shtick, form your vision.”

IMPACT OF THE ENVIRONMENT

When he rode the ferry into Ketchikan in the early summer of 1983, a 29-year-old Ray discovered some of what he’d had in Pullman, a tight community of artists, local characters, and musicians who could prompt and foster his creativity. Now Ray hangs out with printmaker Evon Zerbetz, and his gallery connects to native artist Marvin Oliver’s. He’s active in the local arts council, is a regular at the high school and the historical museum, hosts a radio show, and shares his talent as an illustrator for regional environmental causes.

Built on a steep hill and partially set on pilings over the water, Ketchikan is a town with as many stairways as sidewalks. It’s a

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Evon Zerbetz found her calling after college, in an art class she was taking from Ray Troll. Though the Alaska native attended Washington State University the same time as Ray, the two never met. Evon was

an undergraduate majoring in food science; Ray was a grad student who spent most of his hours in his studio.

After graduating in 1982, Evon moved home to Alaska and for a few years tried a variety of jobs and art forms. Then one year, she took Ray’s class at the University of Alaska and discovered the medium that has brought her success: linocut prints.

“I guess you could say I was Ray’s protégé,” says Evon, tucking her long sandy blond hair behind her ears as she tours Ray and me through her new studio. We’re wandering through the lower level of her ocean-view house in a neighborhood south of Ketchikan.

“In Ray’s class something clicked. I discovered I’m more comfortable carving than I am with a pencil.”

Today she carves her linoleum blocks and makes her large black-ink prints in her basement studio. When her prints are dry, she carries them upstairs to a smaller studio, where she hand-colors them. “I like the blend of the creative time and the more technical time,” she says of the work.

Evon’s early prints were whimsical images of southeast Alaska and its animals, including salmon, ravens, and bears. More than a decade ago, she started illustrating children’s books. There again, Ray had a role. He introduced her to his book editor. The editor liked Evon’s work and some time later offered her a job illustrating a children’s book on northern animals. That first book, *Lucky Hares and Itchy Bears*, led to more, including Evon’s more recent works, *Little Red Snapperhood* and *Ten Rowdy Ravens*.

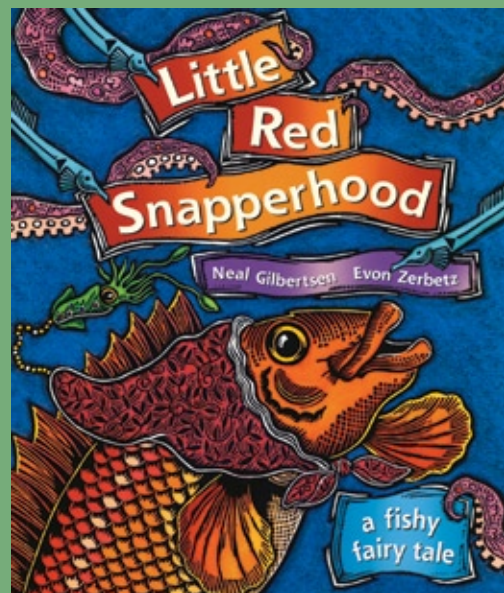
“Ravens have flown through my work through the last 18 years probably as much as fish have swum through Ray’s,” Evon says. Her work, with its Alaska flavor, animal motifs, and bright colors, has much in common with Ray’s art, but bears the imprint of Evon’s own gently clever esthetic.

At the time of our visit, Evon is assembling pieces for *Raucous – Everything Raven*, an interactive museum show scheduled this winter at New Mexico Museum of Natural History. One piece is a giant raven-themed board game with game pieces the size of lunch boxes. Ray asks to see the *Alaska* magazine, which has a reproduction of the board-game print. He makes sounds of approval and then turns to see the schematic for a sculpture Evon is designing for an elementary school.

“I guess he’s my mentor,” says Evon, as Ray noses through her things. Ray shrugs, adding that what they have is more of a support system. “When I want to talk book business, I talk to her. We’ve both been through the roller coaster.”

Ketchikan is a great town for artists, say Ray and Evon. With painters, sculptors, and totem pole carvers enriching the community of 14,000, and a steady stream of summer tourists to support local galleries, the area recently made a list of 100 Great Small Towns for Art Communities. Perhaps it is because artists are there, that others make it their home.

Or maybe it’s because there’s nothing much to do around there in the winter, says Evon. “We end up making homemade fun.”





Fishes of Amazonia (2000), acrylic on canvas. In 1997 and 2000 Troll joined expeditions on the Amazon River. He was overwhelmed with the diversity of life and tried to capture some of the creatures, including the pink dolphin, the manatee, and 36 fish, in this fifteen-foot-long mural. The work is the centerpiece in a National Science Foundation-funded traveling museum show featuring Troll's art, real fossils, and some live creatures.

Right: *Helicoprion* (2000), colored pencil on paper.

Troll is the first artist to render a believable illustration of what this long-extinct whorl-toothed shark might have looked like.

Below: *The Way We Were* (1997), handcolored linoleum block print. With the help of an ichthyologist, Troll's 16-step evolutionary path reaches back through some really remarkable creatures. **Far right:** At work in his studio, Troll takes a break from hand coloring to change a CD.



place where rubber hipwaders are standard attire, and where fish smokers are part of the patio furniture.

Here Ray found a family. He met and married Michelle, a graphic designer working at the local newspaper. They settled into a 1910 home built part-way up the hill, with space in the back yard for a studio. Michelle, a Tacoma native, is a cool foil to Ray's spicy energy. Their children, Corinna, now away at college, and Patrick, a high-school junior, are a blend.

vertebrates, moving past chordates, sharks, reptiles, and dinosaurs to mammals. You don't see it in that picture, but Ray's own family tree is just as important. He may enjoy his artist's life, but his greatest satisfaction comes from his wife and kids, he says.

Mealtime at the Troll house is a delicious affair, with Michelle turning from the pasta dish she is inventing to warn Ray not to get too absorbed in the computer before dinner.

Sitting down at the table, Ray mentions an award, a medal, he's getting next spring. "My bling," he calls it, saying he's going to wear it all the time, just like Flavor Flav.

Patrick, a big kid with a tangle of red hair, scarfs most of his meal before announcing, "We had school pictures today." Everyone looks up. "I wore funny glasses. I borrowed Dad's."

Michelle rolls her eyes, "OK."



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A few beats pass.

"And I may have made a funny expression," he says. His mother groans.

A smile slips over Ray's face as he glances around the table, seeming to say, "Look what I made."

ADAPTING

At 8:00 every morning, Ray crosses his back yard and climbs the steps to his studio. He calls it his "boy fort," but it more resembles an old cannery rising up three stories at the back of his property, high enough for him to capture the view over the houses below. Inside, he has a great room with a couch, a giant wall where he hangs his works in progress, stacks of out-of-print archaeology and paleontology books, and lots of windows looking out to the water.

Fish specimens in old mayonnaise and peanut butter jars, some given to Ray by scientists, are placed throughout.

His primary workspace is a drawing table in the front corner. As he settles in, he turns in his chair and picks out some music. Maybe it's Jim White, or maybe his latest favorite, The Horseflies. It depends on his mood. Then he'll turn the volume way up.

Sometimes he'll look into his sketchbook/diary to draw on an idea that hit him on the road a few months earlier. Other times, he'll make a clay model and see how the light plays off the features. Depending on the animal he's rendering, when he's "way deep" he might start humming, or growling, or purring, imagining the noises it might make.



Ray Troll's family tree, a drawing he did for his *Planet Ocean* book, starts with stardust, reaches up into bacteria, splits off into plants on one side, and on the other, animals branching up into



For a Troll slide show and links to more Troll stuff, visit Washington State Magazine Online at wsm.wsu.edu.

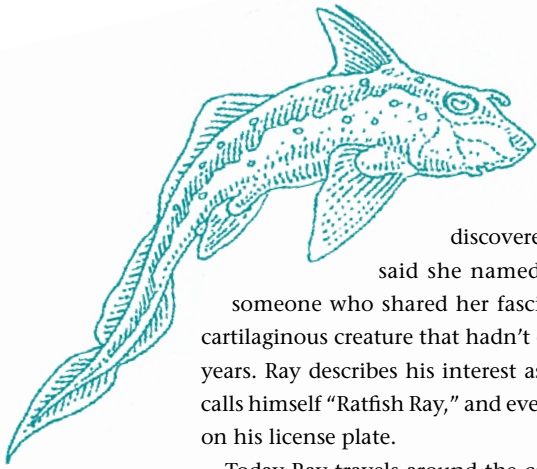


Troll-curios. Pop-artist, science freak, teacher, all wrapped up into one, Ray Troll uses his talents to create museum exhibit pieces like the blue trilobite table and wearable art like the hat and the sweatshirt. The assortment of teeth and artifacts is scattered around Troll's studio. The license plate is Troll's own, and the life-sized version of Troll's *Evolve* was realized by Denver artist Chuck Parson for an exhibit at the Denver Museum of Nature and Science.

When he needs a break from his own work, he often drives south to Saxman to hang out at the carving center, where artists from coastal clans make totem poles out of giant red cedars. When it comes to art, Ketchikan is the place, says Ray, as we drive back through town and past dozens of totem poles, some new, some very old. "That one's Haida," says Ray. "And that over there is Tlingit." "At first I didn't notice it," he says of the indigenous art. "But then I fell in love with it." Ray feels a connection with this creative group, especially since his tendency to iconify fish resonates with the form-line design images of Northwest Native American artwork.

After a lunch break or a field trip, he's back at work until dinner. One thing about Ray, say his friends, he is a disciplined worker. People often think art is created out of mood and whim. With Ray, it's a full-time job.

Scientists love Troll for his interest and enthusiasm, but also for the care he takes in making his renderings as correct as possible. The Gilbert Ichthyologic Society recently made him an honorary member. The National Oceanic and Atmospheric Administration fisheries lab in Santa Cruz hired him to paint a mural. And he created the artwork to aid in species identification for the National Marine Fisheries Service Website.



He even has a fish named after him: *Hydrolagus trolli*, a species of ratfish. The scientist who

discovered the unique species in 2001 said she named it for Ray because he was

someone who shared her fascination for the odd-looking cartilaginous creature that hadn't changed in over 300 million years. Ray describes his interest as "an unhealthy obsession," calls himself "Ratfish Ray," and even carries the Ratfish moniker on his license plate.

Today Ray travels around the country hunting for new fish to draw and real dinosaur bones. Collaborating with writer Brad Matsen and paleobotanist Kirk Johnson, he goes crawling over fossil beds and combing through museum collections, eager to feed his hunger for details about nature, fish, and man. And then he puts it all into his art.

"He comes to this with great enthusiasm," says Johnson, his most recent companion and collaborator. Where many artists render prehistoric animals and prehistoric jungles, Ray connects with his creatures. With his scientifically accurate renditions, he manages to go deeper, say the scientists. "His pictures bring forth other emotions," says Johnson. "What he draws is what we see. These creatures are literally out there in our minds as we drive around."

Even if Ray's art pieces are destined for an exhibit or a book, the originals usually show up in the Soho Coho gallery, a warm, wood-floored space on Creek Street in the old part of Ketchikan. "In the day, it was the big house of ill repute on the creek," says Ray of the structure, noting the irony that Ketchikan Creek running below the wooden pier-supported street is also a place where salmon come to spawn.

We visit the gallery at the end of our day together. The rain has stopped, but the wet weather makes the Creek Street shop lights sparkle. "There's where Michelle and I went on our first date," he says, pointing to the second-story Chinese restaurant next door. He spins around, "There's Dolly's House, another old brothel. And down there is where they hold yoga classes."

The neighborhood is quieter than usual. The tourist season is coming to an end, and the last of the cruise ships left town earlier this afternoon. Even the summer workers have headed to the lower 48. "The town is ours again," says Ray, noting that winter in Ketchikan is a perfect time to hole up and work, and "create your own fun." When he emerges in the spring, his next book should be completed.

"I'm a 50-year-old guy still drawing dinosaurs with crayons," he says, as we walk away from the gallery and down the wooden street. "And like a kid, when it's done, I'll hold it out to see if you like it." ●



HALL ANDERSON

The study of evolution goes far beyond dinosaur bones and finch beaks. Fueled by advances in technology, research in evolutionary biology has never been stronger or more diverse—especially on the Palouse.

by Cherie Winner

darwin was just the beginning

A SAMPLER OF
EVOLUTIONARY
BIOLOGY AT WSU



Charles Darwin's fascination with beetles is shared by modern-day biologists, who are beginning to learn how their incredible diversity of forms evolved.



An evolutionary biologist at Washington State University says he often encounters people who are surprised to learn what he does. They have the impression there's only a handful of scientists in the country who manage to scrape together a few bits of information in support of Darwin's theory.

Nothing could be further from the truth. Scientific journals publish reams of new data every year about how evolution works. The Palouse alone is home to 80 to 100 biologists exploring the patterns of evolution and the processes that drive it.

And that number is deceptively low. In a way, every biologist is an evolutionary biologist. Carol Anelli, an entomologist who also studies the history of evolutionary thought, says few people realize the importance of evolution in their everyday lives, that the theory of evolution underlies all of modern biology and medicine.

"In drug design, or in taking natural products from animals, there's an underlying recognition by the scientist that the way that's operating [in those animals] is the way probably it's going to work on humans," says Anelli. And that similarity is due to shared genetic history.

"There are many areas of science where breakthroughs are made using so-called 'lower organisms' such as bacteria, roundworms, and fruit flies," she says—and if we and the model animals were not linked through evolution, "why would we be doing these studies? We wouldn't. The federal government would not be giving millions of dollars to work on roundworms and fruit flies."

In our look at evolutionary biology at WSU, we have space for only a few research stories. There's a lot more where they come from, spanning the range from what's sexy to salamanders, to how the evolution of a virus can result in an epidemic that kills millions of people. All of the stories are linked by the theme of species adapting and changing to launch their offspring successfully into the world. That's what evolution boils down to: producing offspring that will be able, in their turn, to thrive in their habitat and have offspring of their own.



HOW THE BEETLE GOT HIS HORNS

Walk into Laura Corley's lab, and you won't notice anything you couldn't find in any other modern biology lab. But open the door to the walk-in incubator that houses her experimental animals, and you get hit by the aroma of the barnyard.



ROBERT HUBNER

Corley studies dung beetles, which get their name from their reliance on the droppings of much larger animals, such as cattle or antelope, to nourish their young. Each egg is laid inside a "brood ball" of dung. The female beetle gathers the dung, chews it and mixes it with sand, shapes it into a tidy oval, and places it, with egg inside, in a sort of den she digs in the dirt. When the larva hatches out of its egg, it has exclusive access to its food supply. As it eats and grows, it

Below: A dung beetle develops inside a ball of mammal dung that its mother mixed with sand and saliva and then placed at the bottom of a tunnel. Stages of development, counterclockwise from upper left: egg, larva, pupa, and finally the adult, ready to emerge into daylight.

Right: A large male beetle with horns guards one tunnel, while two other males battle for possession of a neighboring tunnel—and the right to mate with the female who made it.

Illustrations are by Utako Kikutani, courtesy *Natural History Magazine*.



hollows out the brood ball from the inside. When it finishes growing, it pupates, like a butterfly chrysalis, and then emerges from the ball as an adult.

Despite their small size and humble origins, adult dung beetles are among the most spectacular creatures on Earth. Males of various species possess an array of head ornaments that rival anything seen in the deer family. Some of the males do, that is. Whether a particular male develops horns depends not on his genes but on the ball of dung that nourishes him—how big the ball is, how much he eats, and how big he gets.

"It's a threshold trait," says Corley. "If they reach a critical weight, then they make horns. If they don't reach the critical weight, they don't." All the male beetles have the genes to make horns; but those genes are turned on—and they grow horns—only if they get enough to eat as larvae.

Corley is investigating how the horn-development program is controlled. She's especially interested in the insulin-signaling pathway, by which insulin and other molecules enable the animal to sense its own nutritional state and signal various parts of its body to turn specific genes on or off.

She cautions against the notion that "horns are good." She's not keen on the TV-nature-show version of "natural selection" in which every trait and behavior of an animal exists with direct reference to a yes/no, good/bad sort of tally sheet. The situation is more complex, and more interesting.

Corley differentiates between positive, negative, and neutral selection. The payoff in each case is which animals get to pass their genes along to future generations. Positive selection occurs when a genetically controlled trait helps its owner to spawn more offspring. You're a salmon who can swim upstream for two months without eating, and still spawn vigorously? You're in. Or rather, your genes are in (the next generation).

Negative selection occurs when a genetically controlled trait diminishes its owner's chances of passing them on to the next generation. You're a gazelle who can't run faster than a hungry lion? You're outta here.

Then there's neutral selection, which is less dramatic than the other two, but may be at

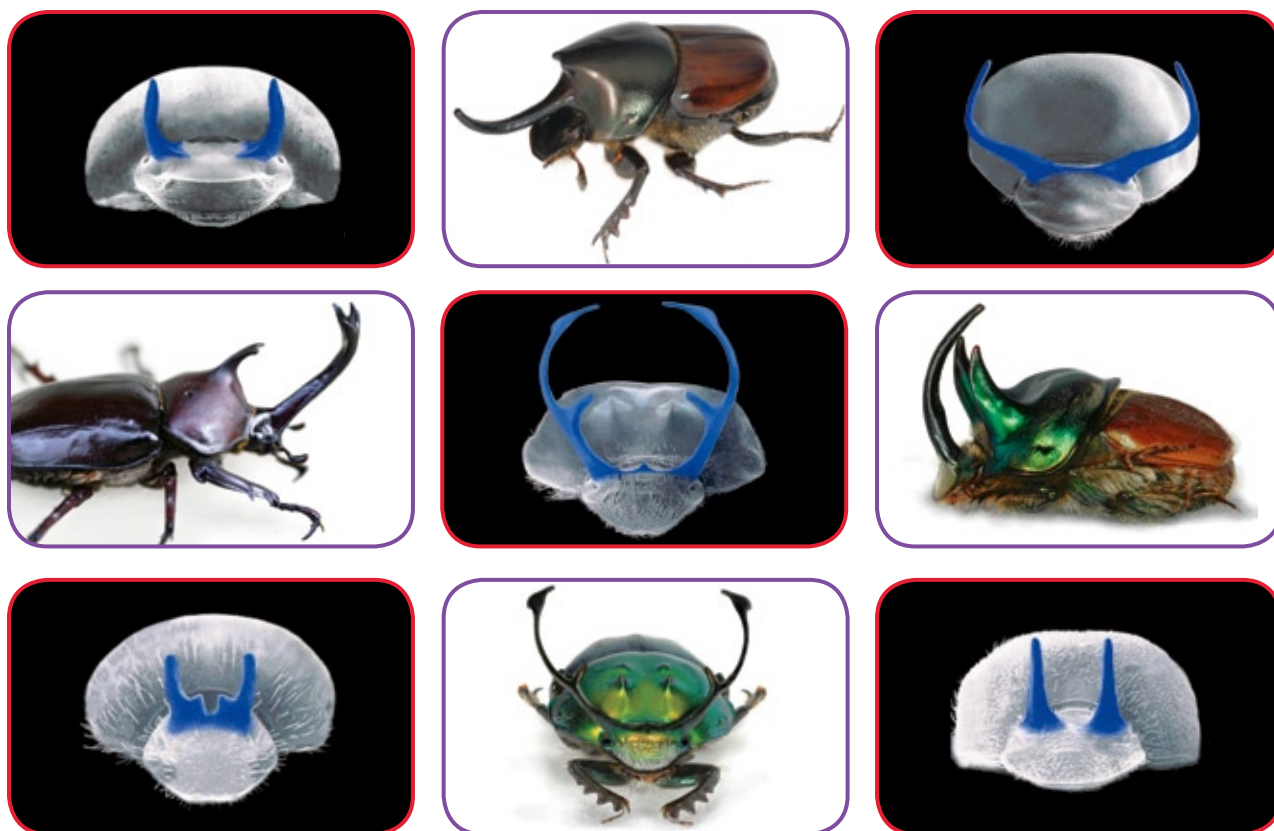
work just as often. "Neutral" means the trait doesn't confer enough benefit or harm to influence the reproductive success of its owner. Such a trait may not be a great boon, but if it's not a big negative, it won't be selected against. A lot of traits—and the genes that control them—may be passed along this way, riding the coattails of some more essential trait.

In Corley's beetles, the key trait—the selected-for trait—may not be those impressive horns, but the plasticity, or flexibility, to grow them or not. It's a way for the beetle to cope with a patchy environment. Horns account for up to 15 percent of a beetle's total weight; in an environment with minimal food, spending calories to lug them around could



consume energy better used in other ways. But in an environment with abundant food, maintaining the horns is not a problem. In that situation, it might be worth having the ornaments, because males with horns have better luck with the ladies than those without them.

"What I think is just absolutely, one hundred percent cool, is that these individuals are the same, but they're different," says Corley. "The first time I ever found out about phenotypic plasticity—that you have the opportunity to be short or tall, or have a horn or not have a horn, or be yellow or white, or make a spot or not make a spot—and that it's almost purely based on the environment, I completely flipped. How does that happen? And I'm still searching for the answers to that question."



Thousands of species of beetles sport horns of various sizes and shapes (shown in purple in the corner and center images). In most species, including the one Laura Corley works with (*Onthophagus nigriventris*, top row, center), only males have horns, and then only if they grow large enough in their larval stage to trigger the genes that control horn development. While horns are handy in battle, beetles without horns fare better when resources are scarce, because they don't have to devote energy to maintaining and carrying the bulky ornaments. Photos and scanning electron photomicrographs by Douglas J. Emlen, associate professor, Division of Biology, University of Montana.

PRESTO, CHANGE-O

Corley's research is part of the emerging field of "evo-devo," which combines evolution and embryology. Only about a decade old, the field already has provided stunning evidence about how different body plans can evolve.

"Do you need a whole bunch of genes to change and be subject to natural selection? Or do a few key regulatory genes do it?" asks Mike Webster, who co-teaches the course in evolution for biology majors. "Some of the most exciting results that are coming out of this area of research are that if you just change the timing of when the genes are turned on and off, you can get a very radically different body plan."

He describes research showing that an embryonic invertebrate can be made to develop into something that looks like a

spider (with two main body segments), an insect (three segments), or a centipede (many segments), depending on when a certain gene is turned on.

Still, environment can't do the job alone. In order for a dung beetle to make horns, he must have the genes to do so. Genes remain central to evolutionary study, and changes in genes—mutations—are still thought to be the main source of differences among species. And mutations, we now know, happen disturbingly often.

"People think you have to get zapped by something," says Charlotte Omoto, who teaches evolution as part of a genetics course for non-biology majors. "No. You know why there are mutations? Every time a new cell or new organism is produced, the genetic material has to be copied. Mother Nature's wonderful, has all kinds of checks and balances; it's very important to make

sure things don't change [too much]. But we have three BILLION of these letters that have to be copied every time a new cell is made. So little mistakes are made.

"It's no different than the monk copying the Bible by hand," she says. "And people have done this—we can see how errors have propagated in manuscripts because of writing errors. Well, exactly the same thing happens in cells."

And in cells, those mistakes—those mutations—can boost an organism's chances to reproduce, or ruin them completely.



COURTESY MIKE WEBSTER



LET'S GET BOTANICAL

Superficially, sedges and African violets couldn't be more different. Sedges resemble grasses, except their stems are triangular rather than round. "Sedges have edges," as the botany teachers say. Their minimal flowers make identifying species a challenge even for experts. African violets have beautiful blossoms; identifying the species is fairly easy, but determining how they're all related to each other is not.

"They're both difficult, but for different reasons," says botanist Eric Roalson. It's the difficulty that appealed to him when he first studied sedges as an undergraduate and African violets as a postdoc. "I was amazed at how complex and poorly understood they were," he recalls. "That was one of the things that drew me in to studying them."

Evolutionary biologists generally work on either the processes of evolution—like Corley's evo-devo experiments—or the patterns of evolution—the family trees.

"I tend to start from the pattern side," says Roalson, adding that the pattern of relatedness can often shed light on the processes that led to the species being the way they are today.

The difficulty with sedges, other than

their tiny, drab flowers, is that they seem to disregard the rules of chromosome behavior that guide other organisms. Any given species may contain chromosomes that have been duplicated, fragmented, or rejoined, in various combinations. Nobody knows yet how the plants survive with all that turmoil at such a basic level of cell structure. What's clear is that these chromosomal hijinks provide a lot of opportunity for species to try new (mutated) forms of genes without paying the price of extinction if they don't work out. A duplicated chromosome gives a plant a "free" copy of hundreds or thousands of different genes. Since the plant still has its original, "correct" copy of all the genes, mutations in the extra copies may not hurt the plant. It's a great way to experiment. Like a writer saving a copy of a first draft, if the next draft isn't good, you can go back to the original.

Roalson is hoping the family-tree approach will help him understand how the variations in chromosomes might have led to the formation of new species of sedges, and help him untangle the confusing state of affairs among African violets. With thousands of species in the group, and a vast

array of flower forms

and colors, the African violets have sparked many a late-night debate at botanical conferences.

Distantly related species can have very similar flowers, while closely related species often

ROBERT HUBNER

have very different kinds.

"And that is nonintuitive," says Roalson, "if you just think that similarity should convey some idea of relationship."

A big question lurks in those statements. How does

he know how closely related two species are, if their flowers are so different?

He knows because of their DNA. Roalson figures out the family tree by sequencing multiple genes of the species he's interested in. New technology enables him to spell out the instructions on the DNA—the exact sequence of A, T, C, and G—and compare it to the same genes in other species. There will be fewer differences in the DNA of two species that are closely related than between two species that are more distantly related. It's like a person doing genealogical research finding the "family resemblance" in an uncle or cousin rather than a great-great-grandmother. The DNA sequences provide the family tree; then he can look at flower form and other visible characteristics and see how they fit within that pattern.

Roalson suspects the variety of flower forms says a lot about how the different species evolved—how one species might have split to form two.

"If you have variation in flower form, then you could have selection for different kinds of pollinators, and that could easily drive speciation," he says. One population of a species could favor a hummingbird as pollinator, gradually evolving a longer, narrower flower tube with a cache of nectar at its base; a neighboring population could favor bees as pollinators, and evolve a broader flower form that would offer bees a stable landing platform. Over time, as the differences in the flowers became more pronounced, the two populations would no longer be able to share the same pollinators—which means they could no longer interbreed. At that point, they would be different species. Still very closely related, still living next to each other, but no longer sharing genes and co-parenting offspring.



Some species of African violets in the genus *Achimenes* have similar flowers despite being distantly related (farther apart on the "family tree" shown here), while species that are more closely related can have flowers that look quite different in color and form. Photos for illustration provided by Eric Roalson.



Carex lupulina:
Hop Caric Sedge



Any given species [of sedges] may contain chromosomes that have been duplicated, fragmented, or rejoined, in various combinations. Nobody knows yet how the plants survive with all that turmoil at such a basic level of cell structure.

DIFFERENT STROKES

The traditional view—Darwin’s view—of how new species form was that when two populations of a species become geographically isolated and no longer interbreed, they may over time become so different from each other that they are no longer the same species.

But even in Darwin’s day, a few odd cases didn’t fit that scheme. They seemed to show speciation—the origin of a new species—can occur without geographic barriers. One famous case happened right here in North America in colonial times, says entomologist Carol Anelli.

When European settlers first arrived on the continent, one species of apple maggot

infested the haws, or apple-like fruits, of hawthorn trees in the Hudson River valley. The adult flies mated on the hawthorn tree and laid their eggs in the young fruit. Most of the flies only visited hawthorn, but a few took a liking to the apple trees planted by European newcomers. By the mid-1800s, the valley was home to two types of apple maggot flies: the original, still at home on hawthorn, and an emerging species that infested apples.



This discovery, and others like it, led biologists to amend Darwin’s theory of how new species arise. Geographic isolation is still regarded as the most common route to speciation, but we now know that other forms of isolation can be just as effective at preventing two populations from interbreeding.

“In this case, these insects could be very close to one another geographically, but they’re separated from one another because of host-plant preference,” says Anelli. All it took was for a subgroup of the original species to develop a preference for apple over hawthorn, which separated them from haw-preferred flies, and they were on their way.



COURTESY CAROL ANELLI

WHO LOVES YA, BABY?

Having more offspring than your competitors is the key to evolutionary success, but it's not always easy to tell which adults produce which



ILLUSTRATION BY HELEN FITZGERALD

young. Although close observation can reveal who spends time with whom, recent advances in DNA profiling show that time together doesn't always mean what we think it means. Take, for instance, a pair of songbirds working hard to feed their clamoring youngsters.

"The assumption up until a decade or so ago was that when you see a male and a female at a nest together raising young, that all the young in that nest belong to that male and female," says Mike Webster. "And then somebody decided to test that genetically—and surprise, lo and behold, not all the young in that nest belong to those parents!"

It turns out that birds, long held up as models of dutiful monogamy, are in fact randy little rascals, and many bird societies are cauldrons of adulterous hanky-panky. Most kinds of birds engage in at least an occasional extra-pair mating. Some mate with others more often than with their partner. In the Australian fairy-wrens Webster studies,

nearly half—*half*—of all chicks are sired by a male other than their mother's social mate.

Surprising as it was, that discovery helped explain something that has puzzled evolutionary biologists ever since Darwin—the bright plumage, dazzling

songs, and flashy courtship displays so common among male birds. The puzzle was how birds could evolve traits that would make them more conspicuous to predators.

Webster says Darwin came up with the idea of "sexual selection," a form of natural selection in which competition for mates drives the evolution of key features. If bright feathers and loud songs enable male birds to have enough offspring to make up for the greater risk of being eaten by a predator, those traits will evolve.

There was a problem with that idea, though. Most songbird males don't seem to compete much for access to partners. In Webster's wrens, some of the males have bright red or orange plumage; others are drab brown. Both kinds get a social mate without much fuss. So where is the sexual selection?

The discovery of extra-pair matings may have solved that puzzle. The males do compete—after they've found a

social partner. And it is quite a competition, complete with offerings of flowers to the object of their desire.

"It's a really beautiful display," says Webster. "The males present flower petals to the females. They'll pick a flower petal, and they'll fly in and present it to the female. They fluff up their feathers, and they dance around. It's just spectacular."

ZOOLOGY 61: Teaching Eugenics at WSU

By Stephen Jones

IN THE END it just ended. No arguments, no intellectual battles among faculty, no acknowledgement of racial hygiene programs. At Washington State College at least, there just weren't enough students who wanted to take Zoology 61, Eugenics. By the beginning of 1950, only six students had pre-enrolled in the course for the following school year, down from 12 the year before. In a memo to the faculty on January 17, 1950, the instructor, Professor Ray Moree, stated, "Enrollment in Zool. 61, Human Heredity and Eugenics is not sufficiently high to justify its continuation; it is believed this course can be replaced by a new one which will meet the needs of a larger number of students." The staff of the Department of Zoology met one week later. Item number 2 on the agenda was Zoology 61. The only record was "Motion Farner, second McNeil. Discontinue Zool. 61. Carried by staff." And that was it. After 30 years, the faculty had dropped course number 61.

Eugenics, the study of improving the human race, was named and formalized as a science in 1883 England by Francis Galton, a cousin of Charles Darwin. By the early 1900s the United States had taken the lead in research, teaching, and funding for the new field. Germany took over that role in the early 1930s.

The first U.S. scientists to accept eugenics were the plant and animal breeders at the land-grant universities and in the United States Department of Agriculture. It seemed only natural to apply the "science," which had met so much success in the planned breeding of farm crops and barn animals, to humans. The result was one of the most tragic episodes in modern science.

Membership in eugenic societies included university presidents, congressmen, philanthropists, representatives of research institutions and insurance companies, clergymen, journalists, physi-

as her social mate, regardless of what he looks like, just to get started on a family. Later she copulates with higher-quality males if her partner is not such hot stuff. Webster doesn't know yet why females prefer the colorful males. Bright color may indicate better food-finding skills or better resistance to disease; or the preference may have arisen by chance.

Extra-pair mating may also be a form of insurance for the males.

In 1920, the first year that eugenics was taught at WSC, you could enter a “Fitter Family” contest at local and state fairs. Based on your pedigree, appearance, race, family size, intelligence, and

Various levels of segregation, by color, status, and perceived deficiency, were already in place in much of the country in the 1920s, but eugeni-

In addition to teaching eugenics, several universities also performed research. The University of Vermont was singled out in the May 1929 issue



"If a male has all his eggs in one basket, so to speak, or all his young in just his social mate's nest, and a predator gets that nest, he has zero reproductive success for that year," Webster says. "From that perspective, I don't think they care which female they mate with. They just want to get their young out in several nests." And if flashy colors help them do that, there will be strong selective pressure to go for the glitz.

FOLLOWING THE QUESTIONS

Horned beetles that don't always grow horns; sedges with mixed-up chromosomes; African violets fitting their flowers to their pollinators; adulterous fairy-wrens. None of these are finished stories. Their evolution, and the research into it, continues. There is no final answer, only deeper questions—many of which

lead back to the far-seeing work of Charles Darwin.

The difficulty with Darwin's ideas, among the scientists of his own day, stemmed from the fact that no one had a clue how natural selection could work. "Darwin didn't know anything about genetics," says Webster. "The scientific debate over whether evolution had occurred or not died within a few years of the publication of that book [*On the Origin of Species*]. The debate that continued on was *how*. What were the mechanisms?"

When Mendel's work on the laws of inheritance was discovered in the early 1900s, biologists finally could "put teeth into the theory," as Webster says. Since then, evolutionary biologists have found that even without knowledge of genetics, Darwin got the general outlines of the story, and many of the details, absolutely right.

In recent decades an explosion of new molecular techniques has enabled researchers like Corley, Roalson, and Webster to pursue many of Darwin's old questions, as well as pose some new ones. If they run into a door they can't open, a question they can't answer, they may shift their focus to another organism or another problem. But they will keep the hard question in mind; and when they learn of a new technique that could help, they'll return to it. Science runs on curiosity and patience. "Unanswerable" questions are an invitation to further thought; they are never a reason to stop searching.

"There's a difference between 'We don't know yet' and 'This is unknowable,'" says Eric Roalson. "Sometimes people interpret uncertainty as, well, this is something we won't ever be able to figure out. These are very complex systems, and we have made great strides over the last hundred years in trying to understand what's going on. There's still a lot that we don't understand fully. But we have ideas and pieces of the puzzle.

"I think that if we want to know it, eventually we *can* know it." ●



of *Eugenics* for special attention because of the statewide eugenic survey of families that originated from the university's zoology department. The survey, which was started in 1926, concentrated on "low grade families." According to Professor Henry F. Perkins, "The characteristics of these families were gone into in order to get at the apparent causes of their deficiency, degeneracy or dependency."

The class syllabi from WSC's Zoology 61 appear to be lost, but the textbooks are still available. One was *Genetics and Eugenics*, by Harvard professor W.E. Castle. It was printed in four revised editions from 1912 to 1931. In the first edition Castle turned over the eugenics completely to Charles Davenport, head of the Eugenics Record Office. Davenport had 41 pages. Here we learn of the genetics of human traits such as wanderlust, suicide, eccentricity, and licentiousness. Davenport also pointed out with pride that the Germans "have recently organized an International Society of Race Hygiene."

Eugenicists were swept up in a cult that existed because of the need for simple solutions to perceived societal problems. These solutions were based on bad and/or simplistic science. Eugenics fell out of favor by mid-century. There were many reasons for the decline. Scientifically, it was a politicized mess. Geneticists, who as a group were painfully slow to criticize, finally began exposing its flaws by the late 1920s. They pointed out that many eugenic traits had no simple genetic basis. And those traits that might have had a genetic component were still influenced by the environment and its interactions with genes.

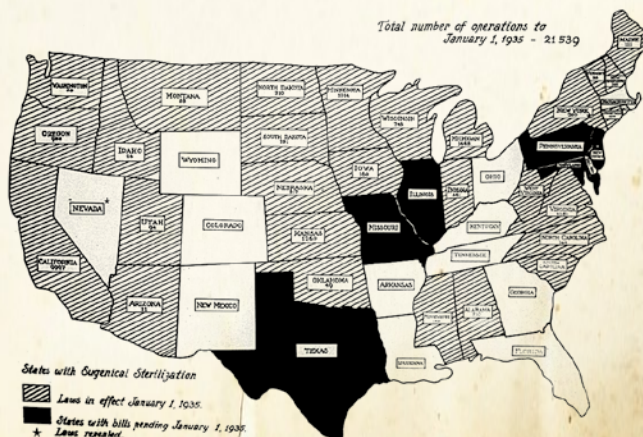
The field of statistics, invented by English eugenicists to prove their theories, was also turning against eugenics. It was shown that, even if traits targeted for removal were controlled by only one recessive gene, the removal of individuals from the breeding pool would have a very small effect on whole populations over time. Once the criticisms became more frequent and broad-based, eugenics became increasingly discredited as a field of science. Racism and white supremacy were also falling out of favor in most quarters of American culture. Anthropologists, many of whom had been saying publicly for decades that eugenics had no scientific basis, were now being listened to. Finally, in the aftermath of World War II, the horrors of Nazi racial hygiene programs were becoming clear to most Americans.

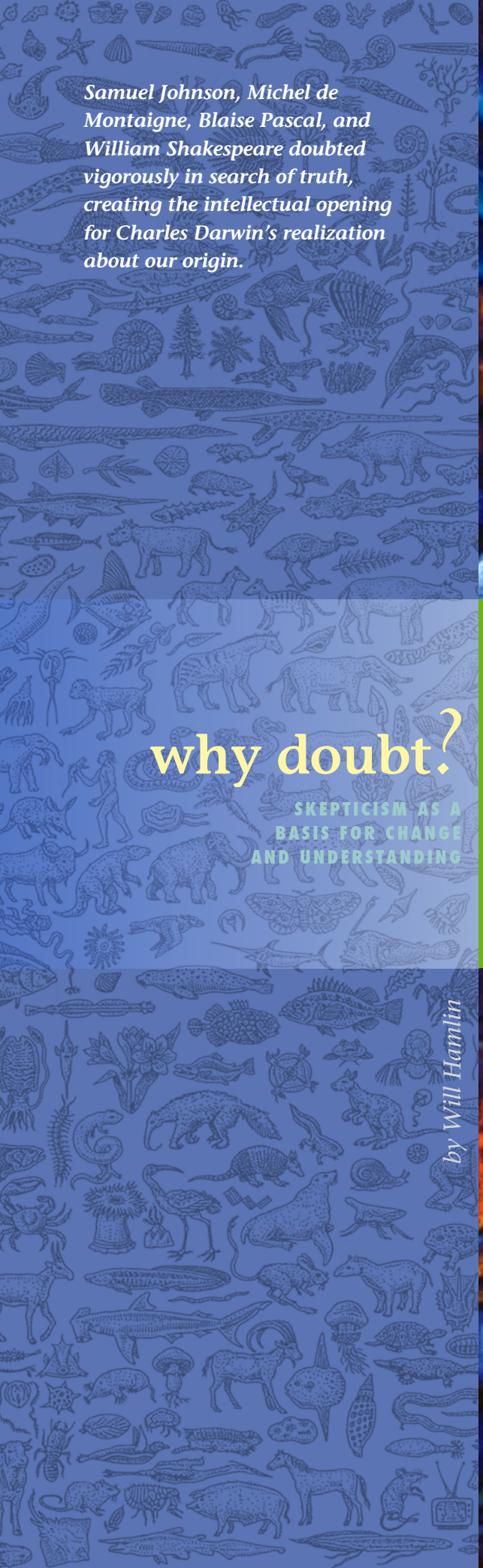
American universities had played a large role in popularizing and legitimizing eugenics as a science. By contrast, they did little to formally reject it, choosing instead in many cases to back away slowly from any involvement.

By 1950 eugenics as a word, as a mode of action, and as a topic of study was on its way out of the mainstream. And in the end, at Washington State University, it seems that it was the students who just didn't want to have anything more to do with it.

Stephen Jones is a professor in Crop and Soil Sciences. He teaches a graduate course in the history and ethics of genetics and gives guest lectures on eugenics in undergraduate courses such as Disability and Society. If you have course notes or recollections of Zoology 61 that you wish to share, please contact Jones at joness@wsu.edu.

LEGISLATIVE STATUS OF EUGENICAL STERILIZATION IN THE UNITED STATES
AND THE TOTAL NUMBER OF OPERATIONS BY EACH STATE TO JANUARY 1, 1935.





Samuel Johnson, Michel de Montaigne, Blaise Pascal, and William Shakespeare doubted vigorously in search of truth, creating the intellectual opening for Charles Darwin's realization about our origin.

why doubt?

SCPTICISM AS A
BASIS FOR CHANGE
AND UNDERSTANDING

by Will Hamlin

FOR THE PAST eight or nine years I've been a student of skepticism. French and English skepticism in the Renaissance, to be precise. It's an obscure interest—dry as dust in many respects—and I usually don't talk about it unless someone pays me to do so, which hardly ever happens. Skepticism is one of those topics that can give academe a bad name. It conjures images of unworldly philosophers who claim they're nothing but brains in a vat—bleary-eyed men who doubt the existence of other minds, or who swat mosquitoes after arguing that physical reality is an illusion. It can make us yearn for the defiant common sense of Dr. Johnson, whose impatience with arcane speculation was unforgettably recorded by James Boswell: "We stood talking for some time of Bishop Berkeley's ingenious sophistry to prove the non-existence of matter; I observed that though we are satisfied his doctrine is not true, it is impossible to refute it. I shall never forget the alacrity with which Johnson answered, striking his foot with mighty force against a large stone, 'I refute it *thus*'."

YET JOHNSON HIMSELF was a skeptic in many ways—above all in his readiness to debunk what he called "cant": trite, conventional, unexamined sentiment. And it is this sort of skepticism that particularly intrigues me. Bertrand Russell later conflated such doubt with an optimistic defense of reason, and his skeptical rationalism seemed powerfully persuasive to many intellectuals in the 20th century. But because my interests lie earlier—and because Renaissance doubt is always connected with faith—I find the meditations of Montaigne and Pascal especially useful in their strategies of questioning bedrock assumptions of European social life. Both men were believers, yet both found doubt compatible with belief, and both offered devastating critiques of pure reason. Montaigne employed skepticism in highly original ways, claiming for instance that "it is better to incline towards doubt than towards certainty ... one overvalues one's conjectures in using them to burn a man alive." Yet elsewhere he was willing to defend the possibility of miracles, arguing that to reject anything that strikes us as improbable is to imply that we know the limits of the possible. And Pascal agreed with him: it's a mistake for humans to suppose that reality can be entirely comprehended by the finite capacities of human understanding. What we know—or what we *think* we know—may well be true; the problem is that we don't know how much we don't know.

Shakespeare, too, was concerned with these matters. In *King Lear*, perhaps his greatest play, he allows one of his characters to suggest that "nothing almost sees miracles but misery." There's a perspectivism embedded in this claim, a sense that what passes as unremarkable for some may seem miraculous to others—especially those who suffer. And no Shakespearean play confronts suffering more directly than *Lear*. This may explain why my students, generally speaking, dislike it. Entering class on the first day of the semester, they often bring

with them a set of deeply-held assumptions about the world, some of which might be encapsulated as follows: “everything happens for a reason,” “we reap what we sow,” “each person has a soul mate,” “things work out for the best,” and “we’re free to choose our destiny.” Armed with these postulates, an assiduous sophomore can transform even a vexing and intractable play like *The Merchant of Venice* into an airtight crowd-pleaser, laced up and buttoned down. But *King Lear* resists such manipulation. It does so in many ways—above all in its presentation of the death of Lear’s loyal and loving daughter, Cordelia.

WHY DOES CORDELIA DIE? She’s innocent, after all. She’s courageous. She’s forgiving. And she lives happily ever after in each of the sources Shakespeare consulted as he wrote his play; only in *Lear* does she perish. What was the Bard thinking? Even Johnson, one of Shakespeare’s most brilliant editors, was baffled. “A play,” he wrote, “in which the wicked prosper and the virtuous miscarry may doubtless be good, because it is a just representation of the common events of human life. But since all reasonable beings naturally love justice, I cannot easily be persuaded that the observation of justice makes a play worse, or that if other excellencies are equal, the audience will not always rise better pleased from the final triumph of persecuted virtue.” Well, yes. Except that pleasing an audience isn’t always the foremost consideration. Sometimes there are more crucial tasks.

Cordelia dies because Shakespeare, at his best, abandons poetic justice and confronts the chaotic flux of life. Every death that makes us weep—from Jesus Christ to Anne Frank, from Joan of Arc to Emmett Till—lies behind the death of Cordelia. That the innocent and the virtuous miscarry is not only true but commonplace; yet *Lear* still troubles its readers, tending as it does to unsettle comforting suppositions about human existence. It doesn’t negate them absolutely, but it casts them into doubt. And one of the duties of a teacher is to give such doubt a hearing.

I WONDER ABOUT what happens to people when they believe too strongly, or accept too readily, or fail to look beyond, or behind, or beneath. I wonder what they see when they view a phenomenon solely through the prism of some favored theory. The extreme examples are ludicrous: Holocaust denial, the Flat Earth Society, or Erich von Däniken’s *Chariots of the Gods*, which credits extra-terrestrials for the architectural wonders of the ancient world. Remember the Nazca lines—those enormous drawings of lizards and hummingbirds in the Peruvian desert? According to the aesthetically-challenged von Däniken, they’re really just runways in an intergalactic space-port established long ago by alien travelers to earth.

But these are limit cases. Far more common are conflicts in which religious belief collides with empirical evidence. Creationism, as we know, tends to be confuted by geology, archaeology, evolutionary biology, astronomy, comparative theology, and historical linguistics, not to mention logic. Still, it’s remotely possible that the famous 17th-century scholar James Ussher was correct when he ascertained the precise date of Creation: October 23, 4004 BCE. Johannes Kepler, after all, had placed it 12 years later, and Sir Isaac Newton seemed quite happy to split the difference, settling for a round figure of 4000 BCE. I’m pretty sure that Newton and Kepler were a lot smarter than I am—or anyone I know, for that matter—so I can only assume that the best minds in those days found it virtually impossible to draw the kinds of conclusions drawn by ordinary minds today. It’s a good lesson in humility, if nothing else: for broadly speaking, people think within the intellectual framework of their own historical moment. Who knows how our opinions will be received half a millennium from now?

SO WHILE I HAVE no immediate plans to join the Flat Earth Society, I’m not unhappy that it exists. As John Stuart Mill argued in Victorian England, a free country will make sure that challenges to received opinion are heard. Those challenges may be irrational, reactionary, or offensive—or they may be right—but whatever their truth-status, their very presence allows widely-accepted views to be contested, and this in turn helps to prevent such views from degenerating into unexamined assertions. Skepticism functions in much the same way. It can forestall a too-willing acquiescence to the-way-things-are; it can distance us from dogmatism and ward us away from zealotry; it can expose our mistakes. Of course we can’t entirely escape from biases and presuppositions, and to imagine that doubt can free us from ideology is to reimpose the most basic positivist assumptions that have been overturned during the past century. But doubt can make us more self-aware; it can keep us vigilant; it can render belief stronger, certainty more meaningful. Faith in doubt can give us the backbone to change our minds. ●

Will Hamlin is an English professor at WSU. The author of two books and many essays, he enjoys watching soccer, listening to Bach and Mozart, and observing academic politics.



Visit Washington State Magazine Online at wsm.wsu.edu for Web links on beetles, African violets, fairy-wrens, and other resources on evolutionary biology.

Opposite page: *Rialto Beach 2005*, by Zach Mazur '06. See more of Mazur's photographs at www.wsu.edu/~photozam/index.html.



Molly McNeil '05, '06

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WHAT I'VE LEARNED SINCE COLLEGE

An interview with

Horace Alexander Young,

musician and teacher

HORACE ALEXANDER YOUNG '83 teaches woodwinds and jazz studies at Washington State University and tours the world as a member of Abdullah Ibrahim's jazz sextet, EKAYA. He plays woodwinds, keyboards, and percussion. He also sings and composes, and has done arrangements for and performed with a variety of musical artists including the Madd Hatta, Nancy Wilson, and B.B. King. He lives in Pullman with his wife, Phyllis, and children, Victoria and Alex. He shared his thoughts on crafting a life of recording, performing, and teaching with Hannelore Sudermann during a visit at his office in Kimbrough Hall.

Horace Alexander Young '83 at Rico's Bar in downtown Pullman, where he often plays with the Dozier-Jarvis-Young Quartet. To hear a piece from his latest album, *Acoustic Contemporary Jazz*, visit *Washington State Magazine Online* at wsm.wsu.edu.

Find your own thing.

My parents thought music should be a part of a basic, well-rounded educational experience. It was not their intent for any of us to become musicians. I started with piano when I was eight years old. I took lessons for two years, along with my older sisters. I had to go to ballet lessons with them, too. I really wasn't feeling that.

My piano teacher's daughter had some plastic flutes around that they gave me, and I learned some fingerings. I knew that if I took flute lessons, that was my way out of having to go somewhere with my sisters. I would have my own thing.

Take breaks—good things will come.

After college I had gone to the Shepherd School of Music at Rice University, but I started burning out. So I took two years off. I was doing a bunch of freelancing in the Houston area. I had started teaching. I was on campus at Texas Southern and passed by an announcement for a TA job at WSU. The job description was everything I was doing in 10 different places. I figured, I can finish my degree, get paid for it, get two years of college teaching experience, and get away.

Time flies, even in Pullman.

Pullman back then was very, very remote. I came here for a very specific purpose: my education. I didn't have a car. I was away from a city of several million people to a place where I could hear myself think. The two years went by real fast. For me it was perfect.

Try things out.

In 1986, I moved to New York. That's where I discovered that music is really what I wanted to do. That whole thing about being willing to starve for it, that's overrated. But are you willing to tolerate the rigors of the profession? Could I be away from my house in the United States for five weeks, in countries where I don't speak the language, in hotels where there's only one bathroom at the end of the hall? Could I be on a tour bus with a bunch of guys, some of whom don't necessarily have the best social decorum or personal hygiene?

Wait for the whole story.

An agent called me and asked me to audition for Abdullah Ibrahim. I got there and realized it was fixed. The guy who was leaving the band was trying to get one of his friends hired. He was actually sitting next to me coaching this other guy through it. But Abdullah told his manager, after he heard us play the very first tune, that he wanted to stop the audition and hire me then.

So he left the room. The manager left the room. The guy who was the musical director left the room, and this guy who was leaving the band left. They had a 30-minute conversation in the hallway. Abdullah wanted to stop the audition and hire me, and they were trying to talk him out of it.

I found out about all of this at two o'clock in the morning, because his manager called me up and said, "I'm sorry to call you so late, but something told me you were not planning to come back tomorrow." I said, "You're right, because this is a fixed audition, and I think I'm wasting my time." He said, "He wants you to come back, he really wants to hire you, but he wants to go through the second day of auditions to keep his word."

Seize your chances.

I've worked and toured with Abdullah Ibrahim for the last 16 years. He is to the South African society what Duke Ellington is to ours. In fact he was mentored by Duke Ellington. At the beginnings of apartheid being dismantled, part of moving forward and establishing an immediate change in the environment was giving people their roses while they're still here. In 1995, there was a formal commemorative concert with the National Symphony of South Africa. We did a program of all of his music with orchestral arrangements and orchestral accompaniment. Members of his American small group and then some South African musicians played as soloists. That was a momentous occasion. [Young conducted the orchestra that evening. It was the first time an African American conducted an orchestra in South Africa.]

Music can take you around the world.

I've played in every major city and most secondary markets. As large as Berlin and as small as Buxtehude [pop. 40,000]. In Germany I played in a theater where Wagner staged his operas. That's pretty overwhelming to be in a venue with that level of music, and the importance of 19th-century German opera, ... performed on the same stage where I was playing a jazz concert. That was just phenomenal to me.

Nurture your ego.

It's not that having an ego is a bad thing. If I didn't have somewhat of an ego, I couldn't play music. It's an extroverted side that I think needs to be there so you can take chances for your audience.

Go out on your own.

I've operated my own record label for the last 10 years. That's been wonderful. It started in the time when the independent part of the music industry was just starting to flex some muscle through the Internet and downloading and everything. It's more advantageous for more musicians to become connected with independent, medium-size labels, or to be enterprising. You have more artistic freedom.

Believe in destiny.

I met my wife in Houston on a Motown revue in 1994. She was a choreographer, and I was working on the vocal arrangements. I was driving her to lunch, and as we got out of the car, I had a flash image of a photograph of me and her and two kids. It was time-stamped to the year 2000 with a little girl that was around five and a little boy that was roughly around two in a room I didn't recognize. I almost fell back in the car. The last thing I was thinking about was getting married, or getting involved with anyone in the entertainment industry. In the year 2000, my son was two and my daughter was five, and that room was in Pullman.

Move.

I had a small daughter, and I was trying to phase out heavy-duty touring. In 1997-98, WSU started an initiative to diversify the faculty by creating positions. Various departments put in proposals to interview target people who had a certain collection of skills. I got a call. I was told, "You wouldn't have to quit touring. Maintaining visibility is part of the whole tenure-track thing." And then they discovered my wife taught dance and was in theater, and they had been wanting to restart the dance program here for quite some time. When somebody offers your whole family a job, you move.

Musicians are teachers.

When I started at WSU, I didn't see it as leaving performing and recording to teach. It's all part of the same mission. Why shouldn't I teach? Mozart had students. That kind of puts it in perspective. If Mozart and Bach had students, then who am I not to?



ROBERT HUBNER

Phyllis Campbell '73 has traded a groundbreaking career as CEO of U.S. Bank of Washington for work in philanthropy as president and CEO of the Seattle Foundation. The community foundation was established in 1946 and raises and grants money to support nonprofit organizations in King County.

Phyllis Campbell

Being about forever

SOMEONE RECENTLY TOLD Phyllis Campbell '73 that she had the perfect resume to run for governor.

In her office high above 5th Avenue in Seattle, Campbell tells me this with a mixture of amusement and certitude. Running for political office is the last thing she's interested in.

"You can print that," she says. "I'll never run for political office.

"I value people who do," she adds, "but that's not my calling."

Politics, after all, is so short-term.

Campbell shows me, with obvious pleasure, the medal that represents the Regents' Distinguished Alumnus Award with which she was recently honored. Campbell's relationship to Washington State University, which the award recognizes, has been continuous and energetic since graduation. But her calling, as she refers to it, has changed considerably since she was last covered by a University publication.

Campbell began her banking career straight out of college as a management trainee with Old National Bank in Spokane. She ended that career in 2001, when she stepped down as president of U.S. Bank in Washington. Explaining her intention at the time, she told

The Seattle Times that she "wanted to try my hand at something else."

That "something else" turned out to be applying her business acumen to philanthropy.

In 2003, Campbell became president and CEO of the Seattle Foundation. The largest community foundation in the region, the Seattle Foundation awarded more than \$49 million in grants last year. It is a considerably different institution than it was when it was established in 1946, and not just in the amount of funds it directs.

"The old paradigm for philanthropy, checkbook philanthropy, was just write checks and trust the organization to do the right thing," says Campbell. "Some of that is still important. But the new model focuses more on strategy and results.

"In the end, how does this change people's lives in a healthy community framework?"

She cites the area food bank as an example. "What causes people to stand in line at the food banks?" she asks. What is the root cause of hunger?

"That's the kind of thinking we encourage."

Directing an organization such as the Seattle Foundation gives Campbell a unique perspective on the health of her community. As with any situation, she says, there is great news and not-so-great news.

"It's a tale of two regions in some ways," she says. Overall, the greater Seattle area is doing very well economically. "We have an economy that's really vital and continues to show up in the top 10 regions in just about any national survey.

"On the other hand, you see communities ... not doing so well, a lot of poverty, a lot of in-migration."

She also points to some tremendous disparities. According to the Seattle Foundation annual report, for example, each year at least one in 10 King County adults runs out of money for food. Among Latinos that rate is one in three. And among people without high-school diplomas, 50 percent run out of food money—and lack health insurance—at 10 times the rate of college graduates.

The funding strategy with which the Seattle Foundation addresses the situation involves creating community gardens, educating people about eligibility for programs such as food stamps, and expanding coordination among support agencies.

Campbell's attitude and strategy are bolstered by those of the Seattle community itself. For example, United Way of King County has the highest per-capita giving of any United Way in the country, and 54 percent of the region's citizens engage in at least one volunteer activity.

She also extols the work of the Gates Foundation as an example for the region.

"Bill and Melinda are very strategic," she says, referring to benchmarks the Gateses require for performance and change.

"Our primary focus," says Campbell of the Seattle Foundation, "is what you can do about it. First we point out in our report what's working. Part of our value to our donors and community is to research what works and to highlight promising strategies.

Although she allows she misses some of the relationships of her banking career and "various other things that made business fun for me," Campbell considers her current role as a marriage of passion with her core career.

"The thing I don't miss is being driven by the short-term, quarterly earnings"—and not having the luxury, she says, of looking at the long term.

"Being in a community foundation, we are about forever. How can we make a difference generations out? What are the things we can put in place now that, hopefully, two generations hence will benefit from [our] actions?

"That's a luxury of this job that I didn't have in the business world."

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In spite of continuing social, economic, and environmental challenges to the Seattle area, Campbell is resolutely upbeat.

"I have to be," she says, laughing.

"I can't accept the fact that disparities will always be there, or that because we have so many immigrants, they'll always have a life less than other folks in the community.

"Hope and optimism," she says, assessing not only her outlook, but that of the donors upon whom her calling depends. "Otherwise, why would they give their money?"

—Tim Steury

John Leitzinger

Racing with the wind

On a small boat with six other guys, with about two weeks to travel 2,300 nautical miles, you really want to be with agreeable people.

That was John Leitzinger's philosophy when he was looking for teammates to sail with him in the 2006 Vic-Maui International Yacht Race, a trip between Victoria, Canada, and Lahaina, Maui.

Fortunately, he long ago found a good sailing partner in his college friend, Ken Marks. After finishing their education degrees from Washington State University in 1987, the pair moved to Tacoma, where they worked as substitute teachers, lived together, and bought a boat from another Cougar classmate's dad. "It was sort of a goofy, romantic notion: Let's buy a boat and we can go sail around," says John. "Well we bought it for about \$1,000, scraped the barnacles off of it, and then started with Wednesday-night races."

The two caught the bug for speed and a



couple of years later invested in the *Ozone*, a 30-footer that they kept on a trailer and drove to races up and down the coast. They also partnered up with Cougar classmate Phil Ohl '87, a Tri-Cities engineer, Scott Brown, a 1990 alum who works in sales, and a few non-Coug friends. With team *Ozone*, they won the Olson 30 National Championship in 2001.

When it was time to go for yet more speed and longer ocean races, they invested in the *Kahuna*, a 37-footer with four berths. They set their sights on the Vic-Maui, a Northwest tradition that started in 1968 and has since attracted hundreds of crews. It's not an easy route, starting in the chilly, and sometimes rough, waters of the Pacific Northwest and ending in sweltering tropical heat.

The team trained for the 2004 race, but at the last minute John was forced to drop out. A congenital heart defect had turned serious, and his doctor was insistent he undergo an immediate valve replacement. The crew, with WSU alum Eric Nelson at the helm, and Ken and Phil on board, raced without him.

So 2006 was the first year for the team to race with the *Kahuna*'s true skipper. John and his wife, Virginia Rehberg, even planned the birth of their child to fit with the race schedule. It worked. Baby Libby was born three weeks before race day.

The yacht race has the 19 competing boats sailing down the Pacific coast toward San Francisco, then turning west to Hawaii. To man the helm for 24 hours a day, the crew split into two watches, alternating six-hour shifts during daylight and four-hour shifts at night. While one watch was working, the others slept on the four beds below deck, prepared meals, gathered weather data, and planned and replanned the route. Often wind and weather conditions obliged them to scramble on deck to change sails, and more than once the small bark capsized, forcing them to right it. It wasn't all work, though. There were daily happy hours, poetry readings, and sing-alongs of The Who.

PHOTOS COURTESY PHIL OHL

Ken, the gourmet, served up lasagna, beef stroganoff, and enchiladas. He made good use of a tuna they caught, marinating it in red wine, coating it with sesame seeds, and presenting it with a strawberry reduction.

July 12 was their official "Cougar Day," and all four WSU alums wore their crimson gear. It was also the day they had 1,000 miles left to go.

Out there in the open sea trying to capture the winds and get up to speeds of 20 knots, they fretted about where they were in relation to the other boats, and watched their provisions dwindle. They actually *wanted* their



Clockwise, from top: John Leitzinger aboard the *Kahuna* during the 2006 Vic-Maui race. Leitzinger plots out the next day's course. Phil Ohl, Ken Marks, Scott Brown, and John Leitzinger celebrate "Cougar Day" during the race. The *Kahuna* at sea near the finish line.



provisions to dwindle, in order to get the boat down to "fighting weight" for the last few hundred miles of the trip. And sure enough, their efforts paid off when, eight days later, just after nine o'clock in the morning, they sailed the *Kahuna* into port at Lahaina as the new division winners.

"It's a lot of fun," says John, who's looking forward to his next big race. "There's competition. It's an adventure. There's not a lot to see out on the ocean, but it seems that every day things are a little bit different."

—Hannelore Sudermann

CLASS NOTES

1940s

Robert Beck ('42 Ph.D. Vet. Med.) and **Virginia Beck** x'44 have been named Distinguished Alumni of the Year (2006) by Modesto Junior College. Both attended the California school prior to enrolling at WSU.

Richard ('47 Hist.) and **Erma Deanne Rantz** ('47 Hist.), Bellingham, participated in the Mt. Baker Rock and Gem Club show, an organization they have been members of since 1984. The event's attractions consist of rocks, minerals, fossils, gems, and jewelry.

1950s

Ralph H. Quaas ('57 Hort.) sold his City Floral in Everett after 40 years of ownership. He is now enjoying full retirement with activities in United Way, Volunteers of America, Hospice, and travel.

Raymond R. Seegers ('58 Ed., Mus.) has completed two terms as the president of the 760-member Thurston County School Retirees Association.

Robert W. Vogelsang ('58 M.A. Sp. & Theat.) was named outstanding retired professor for 2006 by Portland State University. The acknowledgment was based on community service, career development, contribution to the Retirement Association, and contributions to the university. Vogelsang taught speech at WSU from 1956 to 1970.

1960s

Ron Adams '60 was inducted into the National Masters Racquetball International Hall of Fame July 28, 2006. Adams, 68, became the 32nd inductee in the hall of fame's 10-year history.

Hugh Campbell ('63, '69 M.A. Phys. Ed.) retired from his post as CEO for the Edmonton Eskimos, a Canadian Football League team. Campbell spent 26 years with the West Division team.

Larry Culver ('64 HRA) and his wife, Vickie, have received the 2006 Distinguished Community Service Award from the Grace Heffernan Arnold Guild of Fred Hutchinson Cancer Research Center. The Culvers own the Resident Inn by Marriott in Seattle, which often serves as a home away from home for patients undergoing cancer treatment.

Michael E. Howell ('65 Ag. Engr.) is a lieutenant colonel with the Civil Air Patrol and a member of the Twin W Squadron located in Walla Walla. He has been appointed director of safety for the patrol's Pacific Region, overseeing aircraft and vehicles in 192 squadron units in Washington, Oregon, California, Nevada, Alaska, and Hawaii.

Mark A. Suwyn ('67 Ph.D. Chem.) was appointed CEO of the paper company NewPage Corporation in April 2006. Suwyn previously served as interim CEO and chairman of the board of directors of the Ohio-based business.

Ron Vrlcic ('67 Phys. Ed.) is vice president of sales for American Health Holding, Inc., a multi-URAC-accredited medical management company. Vrlcic's previous experiences range from consulting to plan design and pharmacy program knowledge.

Don Alger ('68 Ph.D. Chem.) discussed the risks of nitrates in drinking water during the Museum Without Walls series of the Northern California Natural History Museum at Chico State University. Alger is a professor in the department of chemistry at Chico State.

Eric Mathison ('69 Comm.) is editor of the *Highline Times/Des Moines News*, which serves communities south of Seattle. He won first place for best humorous column in the 2006 Washington Newspaper Publishers Association Better Newspaper Contest.

1970s

Joseph M. Quinn ('70 Comm.) has compiled *The Mexico City College Story: The History 1940-1963*. The work can be viewed online at www.mexicocitycollege.com.

Leslie V. Rowe ('70 For. Lang. & Lit.) was sworn in as U.S. ambassador to Papua New Guinea, the Solomon Islands, and the Republic of Vanuatu on September 5, 2006. A career member of the Senior Foreign Services, Rowe previously served as deputy chief of mission at the U.S. Embassy in Nairobi, Kenya.

Bud Withers ('70 Comm.) has released his new book, *Stadium Stories: Washington State Cougars*. Withers has covered college football and basketball for the *Seattle Times* since 1999. Prior to that, he worked at the *Seattle Post Intelligencer* and the *Eugene Register Guard*. See wsm.wsu.edu/bookstore/alumni/sports/ for information about *Stadium Stories: Washington State Cougars*.

Scott Carson ('72 Bus. Admin.) was named president and CEO of Boeing Commercial Airplanes in September. Known as the "go-to guy" for the company whenever a senior executive is needed to take on a high-profile task, Carson has been with the company for 34 years. He and his wife, Linda, live in Federal Way.

Phyllis J. Campbell ('73 Bus. Admin.) received the 2006 Regents' Distinguished Alumnus Award, the highest honor WSU grants to alumni. The 36th recipient of the award, Campbell is president and CEO of the Seattle Foundation.

Stephen Depner ('73 Econ.) will serve one of DeepGreen Financial's mortgage broker clients as an account executive. Depner previously served at Macquarie Mortgages USA, where he specialized in correspondent lending.

William D. Hyslop ('73 Polit. Sci.) has received the Washington State Bar Association's 2006 WSBA President's Award. A principal at Lukins & Annis in

Spokane, Hyslop is past president of the WSU Alumni Association.

Mark Davis ('78 M.A. Mus.) spoke at an annual prayer breakfast at the Muskogee Civic Assembly Center to recognize Muskogee youth for excellence in academics and citizenship. Davis is chair of the music department at Langston University, Langston, Oklahoma.

Bill Gaines ('78 Elec. Engr.) became the superintendent of Tacoma Power September 2006. He is responsible for the general management and administration of the Tacoma, Washington electric utility. With more than 25 years in the utility industry, Gaines came to Tacoma from Seattle City Light, where he held several executive positions. He also served at Puget Sound Energy as vice president for engineering and contracting and vice president for energy supply.

Rich McBride ('78 B.S. Ag., '01 Ed.D.) is the 2006 Washington Association of Educational Office Professionals administrator of the year. McBride was chosen from a field of nominees throughout the state. He is superintendent of the North Central Educational Services District and lives in Yakima with his wife, **Claudia** ('77 FA).

Michael Longinotti ('79 Env. Sci., Geol.) has been appointed chief financial officer of the Gryphon Gold Corporation. Longinotti is a member of CIRI, American Institute of Certified Public Accountants, and Washington Society of CPAs.

1980s

Kris Weathermon ('81 Comm./Polit. Sci.) is volunteer coordinator for ArtsWest, a playhouse and gallery for the performing arts in West Seattle. Previously, Weathermon worked for 10 years in radio and television journalism and for several cruise lines and travel companies.

Ed Adams ('82 Ph.D. Plant. Path.) is director of the Spokane County extension program at Washington State University at Spokane. Adams was previously director of agricultural programs at the Spokane campus.

Lynn Starr ('83 Bus. Mgt.) is vice president of sales and marketing for Pleasanton-based Seniority, Inc., a management, sales, and marketing consulting firm.

Atri Chatterjee ('84 B.S., '85 M.S. Comp. Sci.) is senior vice president of marketing at CipherTrust Inc., a global market leader in messaging security based in Alpharetta, Georgia. Chatterjee will lead all global marketing initiatives for the company.

Debby Lommasson ('84 Home Ec.) adopted a daughter from China and, with her family, co-founded a charity to move children out of Chinese orphanages and into nearby homes while awaiting adoption. More than 500 girls have

been moved in two years. For more information, visit www.grace-hope.org.

Marci Wainhouse ('88 Comm.) is the owner of Bella Home and Garden in Kent and uses her modern garden to acknowledge the benefits of a revitalized Kent.

1990s

Shelly (Morris) Mumma ('90 Comm.) became the director of leadership, service, and involvement August 2006 at the Campus Center at St. Norbert College in DePere, Wisconsin.

Anthony Leung ('91 Microbiol.) began practice in Akron, Ohio, as an infectious disease specialist August 2006, and is an assistant professor of medicine at Northeastern Ohio University College of Medicine.

Steve Jungen ('92 HRA) is vice president and manager of the Hayden branch of the Idaho Independent Bank. Jungen has been with the bank since 1995.

John Miller ('92 Bus. Admin., Acct.) is senior managing director of the Northwest for the global commercial real estate firm Cushman & Wakefield in Portland, Oregon. Miller works out of Seattle.

Mark Gatterman ('94 Biol.) and his wife, Erica, announce the birth of their son, Drew Steven, born April 2006.

Pete Tingstrom ('94 Bus. Admin.) was awarded the Bronze Star and Defense Meritorious Service medal for service in Iraq and Afghanistan.

Ashley Walyuchow ('94 Comm.) is athletic director at the University of Houston-Victoria. The start-up program will compete in the NAIA and field baseball and softball teams for the 2008 seasons.

Lori L. Dawsey ('95 M.A. Sp. & Hear. Sci.) married James E.H. Warma June 3, 2006. Dawsey owns and operates Hands of Hope Speech Therapy Inc., where she is a speech-language pathologist. Her husband is the operations flight commander for the 341st Operations Support Squadron at Malmstrom Air Force Base.

Mark Martinez ('95 Comm.) was promoted from anchor to weekend anchor at the Fox affiliate station in Phoenix, Arizona.

Andrea (Blake) Spencer ('95 Land. Arch., '98 M.A. Reg. Plan.) is director of the Department of Community Development at the City of Bremerton. She was previously the city's planning manager.

Mark Kaiman ('97 Soc. Sci.) has joined the Lustick Law Firm in Bellingham as a litigation associate. Kaiman served as a deputy county prosecuting attorney in San Juan County and was a municipal court prosecutor for the city of Bellingham.

Frank Clovis ('98 D.V.M.) has opened River City Animal Hospital in Post Falls, Idaho. Clovis previously worked at the largest animal hospital in the Coeur d'Alene area. Last winter, he added Animal Medical Center in downtown Coeur d'Alene to his practice.

John Musella ('98 Comm.) is vice president at the Los Angeles office of MWW Group, one of the nation's top 10 public relations firms. Before joining MWW, Musella served as director of public relations at KB Home, a Fortune 500 company and one of America's largest homebuilders.

2000s

Stacy (Asher) Lawless ('00 Bus. Admin.) married **Matt Lawless** ('01 Env. Sci.) in 2003. They have two children, Annabelle, born October 2004, and Samuel, born August 2006. They live and work in Seattle.

Dawn Levine ('02 Soc. Sci.) graduated from Emory University School of Law in Atlanta, Georgia, and has taken a job with Bernard V. Kearse III P.C., an estate-planning firm. She is a graduate of WSU's Distance Degree Program.

Veronica S. Gunderson ('03 Polit. Sci.) is in her third year at the UCLA School of Law and is scheduled to receive her Juris Doctor in May 2007. Her article, "Personal Responsibility in Parentage: An Argument Against the Marital Presumption," will appear in the Summer 2007 edition of the UC Davis *Journal of Juvenile Law and Policy*.

Catherine Walker ('03 Sp. Mgt) is director of compliance for the Elon University athletics department. She serves as the main contact for the athletics staff regarding compliance-related issues while monitoring day-to-day activities to ensure compliance with NCAA and Southern Conference regulations.

Eli Newton ('04 Bus. Admin.) owns Braganza Pearl Teas in Vancouver and has hopped on one of the hottest teen food trends of bubble tea, the Taiwanese drink. Newton now owns two stores and plans to make his way into the Seattle area next.

Tyler Phillips ('05 Bus.) is an assurance associate at BDO Seidman in Spokane.

Scott Walter ('05 Ph.D. Ed.) has been appointed associate university librarian for services and professor of library administration at the University of Illinois at Urbana-Champaign. Scott lives in Champaign with his wife, Kirsten Pauli, and their daughter, Wendy.

Jeffrey Higgs ('06 Hospitality Mgt) is a sales manager at the Davenport Hotel in Spokane. Higgs previously worked as a group sales executive and operations manager at Sun Valley Resort in Idaho.

Zachary A. Mazur ('06 M.A.) has been named an "emerging artist" by the *Spokesman Review*. Mazur's landscape and documentary photography deals

with social and environmental issues. He is currently an instructor in WSU's fine arts department. See pp. 43 and 56, this issue.

Randy Mueller ('06 Gen. Stud.) ran last spring for the 17th Legislative District seat in Clark County, but did not garner the Republican nomination. Mueller describes himself as a moderate Republican and has been a volunteer for Mothers Against Drunk Driving since 2003 and a member of the Clark County chapter of Washington Conservation Voters.

In Memoriam

1920s

William A. McGinnis ('24 Phys. Ed.), August 25, 2006, Boise, Idaho.

Luella Sisley ('28 Engl.), April 18, 2006, Spokane.

1930s

Theodore E. Mann ('32 B.S., '34 M.S. Mech. Engr.), 98, September 8, 2006, Lacey.

Daniel Magnuson Reaugh ('32 Polit. Sci.), 95, November 9, 2006, Bellevue.

Elizabeth Marie King ('33 Pharm.), 93, September 14, 2006, Tillamook, Oregon.

Wilbur "Bill" A. Rounds ('33 Econ.), 85, August 20, 2006, Yakima.

Joseph Vavra ('34 Chem. Engr.), 95, October 15, 2006, Mount Prospect, Illinois.

James Dunlap x'36, 94, October 24, 2006, Laconner.

Elizabeth M. Klessig Felgenhauer ('36 For. Lang.), 92, September 15, 2006, Fairfield.

Lyle Loyd Gleason ('36 Elec. Engr.), 94, October 3, 2006, Seattle.

John Kinney ('36 Elec. Engr.), 91, July 6, 2006, California.

Phillip E. Bloom ('37 Ag.), 92, August 1, 2006, Ellensburg.

Elizabeth Eleanor Gilmore ('37 Ag.), September 17, 2006, Gresham, Oregon.

Winnifred Greer Shelton ('37 Ed.), July 9, 2006, Mercer Island.

James Earle Butler Jr. ('38 Bus. Admin./Acct.), 89, May 26, 2006, Spokane.

Richard Collyer Raymond ('38 Phys.), 89, November 2006, Montecito, California.

John H. Storms ('38 Elec. Engr.), 94, August 19, 2006, Spokane.

Eleanor R. Hawley x'39, 88, August 10, 2006, Mukilteo.

M. Helen Peterson ('39 Pharm.), 89, June 23, 2006, Centralia.

Nellie Margaret Buxton Picken ('39 Engl.), 91, August 26, 2006, Bothell.

James A. Reavis ('39 Pharm.), 90, July 7, 2006, Pullman.

1940s

Sue Fry George ('40 Soc.), 88, May 22, 2006, Spokane.

Annabel Kitzhaber ('40 M.A. Engl.), 89, October 2005, Oregon.

William DeForrest McMonagie ('40 Vet. Med.), 91, August 27, 2006, Tacoma.

Betty Jo Neils ('40 Sp. & Hear., '41 BED Ed.), 87, October 24, 2006, Tacoma.

Richard G. Sanders ('40 Econ.), 88, April 9, 2006, Bradenton, Florida.

Dorothy Hess x'41, 87, October 30, 2006, Spokane.

Albert Kitzhaber ('41 M.A. Engl.), 90, June 2006, Oregon.

Agnes Mary McQuarrie ('41 M.S. Phys. Ed.), 89, March 9, 2006, Pullman.

Robert B. Woodworth ('41, Bus. Admin.), 89, September 9, 2006, Bellevue.

Don Adams ('42 M.S. Chem.), 74, August 23, 2006, Spokane.

Russell Claar ('42 Arch. Engr.), 88, September 15, 2006, Pasco.

Jean R. McCracken ('42 Bus.), 86, October 6, 2006, North Bend.

Maxine L. Klopfer Wendel ('42 Soc.), 86, October 12, 2006, Spokane Valley.

Betty Jo Wainscott Baker ('43 Mus.), 86, August 27, 2006, Portland, Oregon.

Earl Hinz ('43 D.V.M.), 85, August 8, 2006, Yakima.

James Berger Kludt ('43 Zool.), 83, September 2, 2006, Portland, Oregon.

Randolph G. Thomas ('43 Geol.), April 8, 2006, Calimesa, California.

Jennie Harold ('44 Engl.), 83, July 3, 2006, Walla Walla.

Rosalie Daggy Miller '44, 84, October 3, 2006, Washington, D.C.

Norman Jenkins Ryker Jr. '44, 79, May 7, 2006, Santa Clarita, California.

Eugenia Lee Dow ('45 Sp.), 78, August 16, 2006, Seattle.

Jane E. MacKelvie x'45, 82, April 10, 2006, Coeur d'Alene, Idaho.

Primo Jack Piovesan ('45 D.V.M.), 83, April 4, 2006, Ferndale.

Clyde M. Bemis ('47 D.V.M.), 87, April 22, 2006, Spokane.

Genevieve Wakefield Boddington ('47 Nurs.), March 6, 2006, Bellevue.

Ruth M. "Tommy" Simmelink McFarland ('47 Home Ec.), 82, May 24, 2006, Kennewick.

Janice Miller ('47 Sp. & Hear. Sci.), 80, November 30, 2006, Pullman.

Eric Batchelor ('48 Civ. Engr.), September 8, 2006, British Columbia, Canada.

Grace Lucile Ott Parks ('48 Home Ec./Chem.), 80, August 16, 2006, Palouse.

Robert C. Seaman ('48 Radio Sp.), 88, December 18, 2005, Los Altos, California.

Richard Eldon Sever ('48 Elec. Engr.) 81, October 29, 2006, Seattle.

Norman I. Berg ('49 Elec. Engr.), 83, November 18, 2005, South Beach, Oregon.

Philip M. Kelly ('49 Elec. Engr.), 84, August 14, 2006, Seattle.

Masami "Mac" Kiyono ('49 Elec. Engr.), 81, October 13, 2006, Seattle.

Marie L. Skellenger ('49 Home Ec.), 84, March 25, 2006, Vancouver.

David Eugene Swanson ('49 Engr. & Arch.), June 2006, Butte, Montana.

1950s

Arnold Biermann ('50 B.A. Ed., '53 M.A. Ed.), 79, September 28, 2006, Sammamish.

Edmund F. Cushing ('50 D.V.M.), 87, May 12, 2005, Sparks, Nevada.

Harry Everett Gust ('50 Ed.), 81, March 28, 2006, Chehalis.

John Bernard Hanson ('50 M.S., '52 Ph.D. Bot.), 88, October 23, 2006, Urbana, Illinois.

Boyden W. "Buz" Houtz ('50 Ag.), 80, April 15, 2006, Walla Walla.

Oj Duaine McKee ('50 Pharm.), 83, August 2006, Boise, Idaho.

Orlo Park ('50 Gen. Stud., '51 BED Ed.), 82, October 13, 2006, Anchorage, Alaska

Charles I. Peckenpaugh ('50 D.V.M.), 82, July 17, 2006, Tacoma.

Jacelyn M. Robbins ('50 Bus. Admin.), 77, August 9, 2006, Palatine, Illinois.

Lyle Edward Boulange ('51 Pharm.), 80, November 2006, Richland.

Irene F. Hallett ('51 B.S. Phys. Ed., '55 M.A. Ed.), September 22, 2006, Des Moines.

William W. Pardew ('51 Civ. Engr.), July 18, 2006, Eagle, Idaho.

Shirely A. McIntyre ('52 Elem. Ed.), 76, March 31, 2006, Mount Vernon.

Thomas A. Kerr ('53 Ag. Econ.) 74, October 31, 2006, Spokane.

William A. Langbehn ('53 Econ.), 78, August 21, 2006, Rockville, Maryland.

James Oliver Lonborg ('53 Phys.), 72, December 14, 2005, Las Vegas, Nevada.

Gordon J. Thomas ('53 Geol.), 76, November 12, 2006, Seattle.

Clarence Robert York ('53 Ed.), 78, July 18, 2006, Silverdale.

LeRoy Vincent Gallagher ('54 D.V.M.), 80, October 8, 2006, Silverton, Oregon.

Harold V. "Hal" Kinville ('54 Ed.), 77, August 21, 2006, Spokane.

Janice Selby McIntosh ('54 Lib. Arts), 75, June 1, 2006, Medford, Oregon.

Frances E. "Ellie" Corrigan x'56, 72, September 2, 2006, Copalis Crossing.

Jack Gorski ('56 M.S., '58 Ph.D. An. Sci.), 75, August 30, 2006, Madison, Wisconsin.

Naomi Mary Jackson ('56 Ed.), 95, September 20, 2006, Portland, Oregon.

Andrew C. Knaphus ('56 Ed.), 86, April 14, 2006.

Bruce Franklyn Miller ('57 Gen. Stud.), 72, August 18, 2006, Everett.

Hubert T. Prince x'57, 72, October 26, 2006, Post Falls, Idaho.

George Klavano ('58 D.V.M.), October 29, 2005.

Gilbert B. Manning ('58 Ph.D. Biochem.), 77, July 15, 2006, Spokane.

Mary Ann Ballantyne ('59 Nurs.), July 2006, Charlotte, North Carolina.

Birdie Belle Martin ('59 Bus.), September 2, 2006, Anchorage, Alaska.

1960s

Craig Wellington ('60 B.A. Mus., '65 M.A. Mus.), August 30, 2006, Olympia.

Kenneth L. Jordan ('61 Mech. Engr.), 78, September 4, 2006, Seaside, Oregon.

Thomas F. Widdows ('62 Pharm.), 67, October 12, 2006, Tigard, Oregon.

Craig Switzer ('64 Ag. Mech, '69 M.S. For.), April 16, 2005, Walla Walla.

Diane L. Tyson ('66 MED CED), 67, April 17, 2006, Lewes, Delaware.

George C. Leslie ('67 Ph.D. Math.), 71, September 17, 2006, Troy, Idaho.

Erhard Roland Menzel ('67 Phys., '70 Ph.D. Phys.), 63, February 3, 2006, Lubbock, Texas.

1970s

Earl O. Dickinson ('70 Ph.D. Vet.), 78, October 16, 2006, Lincoln, Nebraska.

Geoffrey L. Gelhaus ('71 M.S. Engr.), 61, October 31, 2006, Richland.

Gretchen Heuterman ('76 Ph.D. Hort.), 71, July 31, 2006, Mount Vernon.

Merrilee Ann Striker ('76 Gen. Stud.), 52, August 2, 2006, Edmonds.

David Allison ('77 Ag.), 52, October 1, 2006, Prosser.

Cheryl Ann Phillips ('77 FA), 51, September 10, 2006, Anchorage, Alaska.

Robert Haggerty ('78 Bus. Admin.), 51, November 19, 2006, Maui, Hawaii.

Kristine Lee Monroe LeRoy ('78 Home Ec.), July 13, 2006, Mukilteo.

Neysa Carole Dobson ('79 Nurs.), 71, October 4, 2006, Medical Lake.

Vincent F. Obersinner ('79 Ag.), 53, October 11, 2006, Chino Hills, California.

1980s

Marc J. Delamater ('81 HMB), 58, August 24, 2006, Healy, Arkansas.

Judy Ziehl O'Dea ('81 Ed.), 47, September 4, 2006, Burbank, California.

John Farmer ('82, '96 M.S. Hort.), 54, September 22, 2006, Grandview.

Brian K. Wilkes ('84 Ed.), 44, November 12, 2006, Spokane.

Brent Daniel Lederer ('87 HRA), 44, July 5, 2006, Hilo, Hawaii.

1990s

Steven J. Brunsfeld ('90 Ph.D. Bot.), 53, October 6, 2006, Moscow, Idaho.

John Robert Foresman ('90 Comm.), 38, July 4, 2006, Spokane.

Dick Trevor Burgess ('92 Mech. Engr.), 46, April 5, 2006, Everett.

Jason A. Taitch ('94 Biol.), 35, November 2006, Spokane.

James "Jim" W. Beseda ('98 Chem. Engr.), 36, September 9, 2006, Elma.

Judith "Judy" Sheridan Tole x'98, 59, October 15, 2006, Kennewick.

2000s

Andrew Todd Hane x'01, 28, October 5, 2006, Pasco.

Rebecca Kay Hall ('04 Soc. Sci.), 49, November 5, 2006, Naples, Idaho.

Staff/Faculty

Irene "Lavonne" Berg, former technician, Veterinary Microbiology, July 15, 2006, Pullman.

Laura Dustan, former professor and dean, Intercollegiate Center for Nursing Education, 88, November 29, 2006, Greensboro, North Carolina.

Robert "Bob" Ivan Ellsworth, staff, 84, September 5, 2006, Pullman.

Alma Annis Gallagher, staff, 82, October 8, 2006, Silverton, Oregon.

Grant Harris, faculty, 91, June 21, 2006, Pullman.

Wilhelmina "Willy" Hooper, staff, 56, September 10, 2006, Richland.

Ancel Jeffers, 68, retired maintenance supervisor, September 4, 2006, Palouse.

Kathleen Kammeyer, September 26, 2006, Spokane.

Michelle R. Kendrick, faculty, 42, September 30, 2006, Milwaukie, Oregon.

Evelyn Lash, staff, 88, September 20, 2006.

John M. Lawrence, faculty, 90, September 18, 2006, Corvallis, Oregon.

Harold Y.S. Loo, staff, 87, March 2006, Honolulu, Hawaii.

Betty Jean MacKelvie, staff, Ag Extension Office, Pullman, 1950s, 75, October 30, 2006, Lewiston.

Gertrud Mazur, faculty emeritus, Foreign Languages and Literatures, 75, September 14, 2006, Pullman.

Eleanor C. Miller, staff, 93, August 17, 2006, Pacific Grove, California.

Darice Obermeyer, cook with Dining Services, 57, November 1, 2006, South Beach, Oregon.

Raymond L. Richmond, staff, 92, September 10, 2006, Pullman.

Richard Ritter, staff, 71, October 4, 2006, Pullman.

Robert Paul Gerhardt Worthman, retired member of the anatomy department, Veterinary Teaching Hospital, 86, June 1, 2006, Wenatchee.

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**With Amusement for All:
A History of American
Popular Culture Since 1830**

By LeRoy Ashby
The University Press of Kentucky,
Lexington, 2006

For many years, the study of popular culture, like comedian Rodney Dangerfield, “got no respect.” Only with the vast amount of excellent, sophisticated research in the last three decades has the culture preferred by millions of Americans become serious history. LeRoy Ashby’s *With Amusement for All: A History of American Popular Culture Since 1830* is the first book to synthesize hundreds of recent studies of specific aspects of popular culture into a single, sweeping story. Both in time frame—from the 1830s, when innovations in communication and transportation first made a truly mass, national culture possible, to the present era of proliferating new media—and in scope—including circuses, wild west shows, vaudeville, magicians, musicals, stand-up comedy, rock, pop, rap, comic books, television, film, the Internet and much more—this is the kind of book that

would be called encyclopedic, if it weren’t such a witty and accessible read.

Ashby, a longtime professor of history at Washington State University, manages the immense scale of his story by building the book around several recurring themes that go a long way toward illuminating both the dynamics and the meanings of popular forms for U.S. cultural history. He notes, for example, a persistent pattern of popular cultural forms emerging from the margins of society—racial minorities, immigrants, women, economically lower classes—where the entertainments are originally shunned as crude, rude, or otherwise inappropriate, but then slowly adapted and adopted (for profit) by the mainstream. This process meant that popular culture was one key mode of upper mobility for many who had been beaten down by society. But such processes were also riddled with contradictions, as one marginalized group frequently gained respectability at the expense of others.

Blackface minstrelsy provides an apt example. Minstrelsy, in which white men would cover their faces with blackened cork to sing songs and tell tales in demeaning parody of African Americans, was the single most popular form of entertainment in 19th-century America. The source of vicious racial stereotyping that continues to this day, blackface was also a form used by the white working class to satirize bosses and the pretensions of the upper classes. It was also a route by which “not-yet-white” immigrants, especially Irish Americans who had long been stereotyped in ways similar to those applied to African Americans, proved themselves “real” (i.e., white) Americans. In yet another twist, Afri-

can Americans themselves were eventually drawn by economic necessity into “blackening up” as minstrels. Though caught in the web of a deeply racist form, many black performers managed to subtly undermine stereotypes and give humanity to the characters.

The class antagonisms visible in minstrelsy were pervasive throughout the 1800s, and without them we might never have had our modern form of Christmas. Christmas celebrations with a tree, gifts, and a family feast were, Ashby shows, started by nervous middle-class Americans who worried that the wilder forms of Christmas celebration among the working classes, especially carnivalesque near-riots in which the poor upturned social hierarchies and mocked the powerful, were in danger of overturning those hierarchies permanently. Christmas and minstrelsy were just two of many ways that class tensions were tamed, or were displaced onto racist forms that kept white workers in their place. Ashby shows how such patterns have persisted into the present, where debates about rap music, for example, are filled with questions pitting neo-stereotyping, sexism, homophobia, commercialism, and alleged immorality, against genuine elements of critique emerging from the underclasses.

With Amusement for All shows richly how much historical understanding we would have lost had elitist prejudice continued to limit academic study of popular entertainment.

—T. V. Reed

Reed is a professor of English, director of American Studies, and associate dean for interdisciplinary studies at WSU.

WASHINGTONIA



THE PALOUSE FROM STEPTOE BUTTE 2006, BY ZACH MAZUR '06

In a dark time, the eye begins to see . . .

—THEODORE ROETHKE

A Century of Service— Alden “Al” Couch ‘29

A hundred years young and the last living founder of the Alpha Kappa chapter of Phi Kappa Tau fraternity, Alden “Al” Couch (’29 Comm. Elec. Engr.) of Langley, has embodied the Cougar spirit for more than eight decades and created a legacy at Washington State University and his beloved fraternity.

With only a “few bucks” in his pocket, Al joined Phi Kappa Tau as a founding member at Washington State College in 1926. “Those were tough times. I didn’t know how long I was going to be able to stay in Pullman,” said Couch.



Alden “Al” Couch ‘29

It was his fraternity that stepped up and made it possible for him to continue at WSC. “They got me a job sweeping floors for \$10 a month,” said Couch. This enabled him to live in the fraternity house with his new friends and complete a degree in commercial electrical engineering. After Couch received his degree, he enjoyed a 40-year career in sales at Puget Sound Power, now Puget Sound Energy.

“Knowing what Washington State had done for me, I asked Washington State what I could do to create a scholarship,” said Couch. In 1994, he established the Alpha Kappa Endowed Scholarship Fund to benefit members of Phi Kappa Tau fraternity at WSU and to honor his fraternity for the impact it had in his own life.

“Recipients of the AK Endowed Scholarship are among the best and brightest in WSU’s fraternity community. Donors who contribute to this fund join Al Couch in his lifelong commitment and truly make a difference in the life of an exceptional WSU student,” said Anita Cory, director, The Center for Fraternity and Sorority Life.

In 2003, the Phi Kappa Tau National Fraternity awarded Couch its prestigious “Phi Award” in recognition of his meritorious service to Alpha Kappa Chapter.

“The fraternity is important because you make lifelong friends and there were so many people at WSU who were also important to me,” said Couch. “I felt so indebted to the fraternity and to WSU, that I wanted to do what I could to help.”

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