

Humboldt

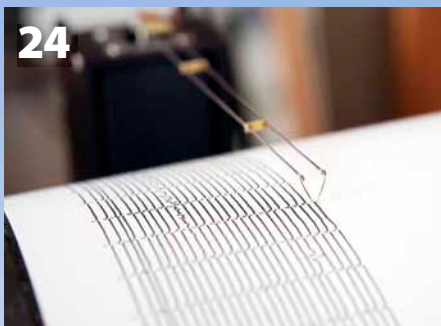
The Magazine of Humboldt State University | Fall 2010

Pressure Points

Seeking lessons,
Professor Lori Dengler
treks into the aftermath of
BIG QUAKES

Humboldt

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Fall 2010

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BACKGROUND PHOTO: This beautiful stretch of coast west of Petrolia, Calif., is located near the Mendocino Triple Junction, where three fault lines meet: the San Andreas Fault, the Mendocino Fault and the Cascadia subduction zone. The last large earthquake to affect the area was a magnitude 7.2 quake in 1992.



from the President



I HAD LUNCH RECENTLY with James Robinson, a student graduating in December with a degree in Environmental Resources Engineering. He told me about being on the HSU team that took the top prize, for a micro-hydroelectric system in Bhutan, at the National Sustainable Design Expo in Washington, D.C. He also told me about his plans for a new business on the North Coast. (I'm sworn to secrecy on the concept.)

Not long after, I was at an event to celebrate the 10th anniversary of a local community fund. A woman introduced herself to me and told me how much her HSU degree has meant to her life.

As president, of course, I never get tired of hearing these stories. They are reminders that we are doing our job. And I hear plenty of them, given that so many of our area's entrepreneurs and professionals have ties to Humboldt State.

The stories are also reminders of just how important higher education is to the economy. That is especially clear on the North Coast, where HSU is quite a large institution when you consider the area's small population. There are few portions of the local economy that have not been impacted by HSU – and we are constantly working to do even more through efforts like our Small Business Development Center, which has helped spur the growth of many local businesses.

A new statewide study for the California State University system, conducted by ICF International, describes just how significant the impact is.

The report shows that the overall economic impact of HSU and the other 22 CSU campuses amounts to \$17 billion annually in California. That is \$5.43 for every \$1 invested by the state. Humboldt State alone supports about 2,300 jobs on the North Coast, and has an economic impact in our area of \$190 million annually.

We often hear politicians talking about the “costs” of public higher education, but the reality is different. Higher education is a smart investment in our state's economy and in social stability, and one that has always paid big dividends.

I hope you will remind your local representatives of the need to support education in our state. Our children and grandchildren are counting on us.

The full study on the impact of the CSU system is at www.calstate.edu/impact.

Sincerely,

Rollin C. Richmond
President

Humboldt

The Magazine of Humboldt State University

2009 CASE VII Gold Medal Winner

humboldt.edu/magazine

Humboldt magazine is published twice a year for alumni and friends of Humboldt State University and is produced by University Advancement. The opinions expressed on these pages do not necessarily reflect the official policies of the university administration or those of the California State University Board of Trustees.

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[Feedback]

I'M A GRAD STUDENT at HSU and am wondering why there are no advertisements in *Humboldt* magazine? I think I could make all kinds of dough selling ad space in that publication. :)

I'm just curious, but if you've got the time and the answer I'd like to know.

Glen Webster

Arcata, Calif.

EDITOR'S NOTE: *There are a few tough challenges with selling ads in the magazine, including jeopardizing our nonprofit mailing rate (and thus increasing our production costs) and our limited twice-yearly schedule. But we'll continue to consider it in the future. And we love that you think the magazine is so good that selling space would be easy.*

I CANNOT BELIEVE SOMEONE did not think of the wonderful ice cream palace, Bon Boniere. It was pictured on the cover but when I went through the magazine it was not there. I remember going there with my friends for everything from birthdays to graduations. It was not the cheapest ice cream, but it was the best. If I ever get the chance to bring my children up here, this is one of the first places I want to take them.

Nina Harting Anselmo ('95 Liberal Studies, Elementary Education)

Stockton, Calif.

EDITOR'S NOTE: *We decided not to include local businesses on the list of what to do in Humboldt to avoid the appearance of promoting any one establishment. However, in our caption on the Table of Contents page we identified Bon Boniere as the site of our cover photo. And we agree: They have great ice cream.*

I WAS PLEASED TO see some long-overdue recognition for Dr. Golightly in the

spring *Humboldt* magazine. I was an undergraduate wildlife major when he started teaching at HSU. I took only one class he taught then, and it was required. But that class was wildlife techniques. He was my lab instructor in addition to lecturer. And he was then the School (College) of Natural Resources' primary reviewer of graduate student theses, mightily feared for his editorial pen by all NR grad students except his own, who were accustomed to it, as was I, because he also served as advisor to my senior thesis and treated me similarly.

Over the last 30 years I have learned much from work, teaching students myself and studies at other universities. The things I learned from other HSU professors (including but not limited to Drs. Koplin, Harris, Botzler and Kitchen) have proven more important than most things I've learned since. But by far and away the most valuable skills I've learned in my professional education and experience are how to think critically about wildlife problems and solutions, particularly their assumptions, biases, inferences, benefits and costs, and how to write and edit passably well. I learned more about those skills from Rick Golightly than anyone else. I suspect he has many former students who feel the same way. Though I've thanked him personally for it before, and will thank him again next time I see him, I hope you publish this in your next edition as a more public acknowledgment that he richly deserves, for the things he teaches that are more valuable than just how to catch animals. Thanks.

Michael J. Behl ('83 Wildlife)

Erie, Colo.

LETTERS ARE WELCOME and may be published in upcoming issues of *Humboldt* magazine. Letters may be edited for length and clarity.

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Students Relight Redwood Bowl

THE RELIGHT REDWOOD BOWL project, designed to slash electricity consumption and light spillage in the stadium, is now complete. The project was funded by a \$75,000 grant from the student-led Humboldt Energy Independence Fund and carried out by the Green Campus Program. It reduces the number of light poles on the field from eight to four, and reduces the number of light bulbs used from 96 to 60.

The project is projected to save 61,000-kilowatt hours and up to \$8,000 per year.

Interns from Green Campus, a student-led energy efficiency outreach program under the Alliance to Save Energy, partnered with campus Plant Operations, who did the installation and retrofitting of the new lighting. Green Campus also received input and support from the campus and local community.

"The project brought several benefits," says Green Campus coordinator Sarah Schneider. "The lights produce less light pollution in the community and less carbon dioxide which benefits wildlife health as well as human health."

HSU will receive a rebate of \$0.24 per kilowatt-hour saved from a system-wide partnership with energy utilities. The UC-CSU Investor Owned Utilities Energy Efficiency Partnership allows campuses to receive energy savings through conservation efforts.



The lighting retrofit also provides learning opportunities for engineering students who will closely monitor the project to calculate the total amount of energy saved.

The Humboldt Energy Independence Fund is a student fee-based fund that finances student-designed energy production, efficiency and education projects.

"Since its inception, HEIF has empowered students to make actual effective change on campus through energy-related projects," Schneider says. "This program enables us to demonstrate our capacity for creativity and professionalism, while working toward institutionalizing sustainability and energy efficiency."

Professor Fuels Energy Efficiency on a Global Scale

ENERGY EFFICIENCY MIGHT BE the easiest and most effective way to fight climate change – and HSU Professor Arne Jacobson is playing a major new role in helping developing nations ratchet up their progress.

Jacobson, who is on sabbatical in Washington, D.C., for the 2010-2011 academic year, will help implement the Department of Energy's Climate REDI initiative. It's a \$100 million project to export renewable energy and energy efficiency measures to rising economic powers like China and Brazil, as well as developing nations. The project will provide policy support and technical assistance, and underwrite capital costs.

"Refrigerator, lighting and air conditioning efficiency standards are things we have a lot of experience with here in the U.S. and especially here in California," says Jacobson, who is co-director of HSU's Schatz Energy Research Center.

While in Washington, Jacobson will also work to expand Lighting Africa – a World Bank project that assists rural Kenyans in switching from fuel-based lighting to electricity-based lighting – into a global effort.

With the price for fuel-based lighting estimated at \$38 billion annually, transitioning roughly 1.7 billion people away from kerosene and wood for light could produce substantial cost savings. The DoE, partnering with the World Bank, is allocating \$50 million over five years to provide investment capital for companies eager to tap into this emerging market. The money will also go to develop a set of quality standards to direct consumers to companies producing reliable products. Helping set those standards is where Jacobson comes in.

"People are frustrated with what they have now, both the kerosene and the low-quality LED products. It's a pretty tough nut to crack, because low-quality products are so widespread," says Jacobson.

The challenge in establishing quality standards for the lighting systems, according to Jacobson, is to know where to draw the line between over-regulation and having no standards whatsoever.

"You don't want to set standards so high that only BMWs are available when all the consumer can afford is a bicycle – you just want to help make sure that the bicycle won't break down in two months."

HSU Named to Princeton Review's List of Top Green Colleges

HUMBOLDT STATE HAS BEEN selected as an environmentally responsible school by the Princeton Review and the U.S. Green Building Council.

The Princeton Review's Guide to 286 Green Colleges, which came out in April, profiles campuses that excel at preparing the next generation of "green" professionals. HSU was praised for its impressive sustainability initiatives, including the Humboldt Energy Independence Fund, the Schatz Energy Research Center and the Campus Center for Appropriate Technology, as well as the university's many hands-on learning opportunities.

"Hands-on' is the modus operandi for HSU's sustainability curriculum," the reviewers wrote. "One hundred courses per semester specifically address the environment and sustainability, and there are opportunities for extensive research, organic farming, and a number of student-taught classes on green topics like bike maintenance, permaculture, and the all-important LEED certification."

Environmental Research & Engineering graduate student Nathan Sanger works with HSU alum Bryce Mayall ('04) to install photovoltaic solar panels atop the Old Music Building.

The guide details each institution's commitment to building certification using USGBC's LEED green building certification program, environmental literacy programs, sustainability in the curriculum, transportation programs such as bus passes, use of renewable energy resources, recycling and conservation programs and much more.

"It's a pleasure to be recognized for something that is so central to the essence of Humboldt State," said HSU President Rollin Richmond. "Sustainability is a core principle here, and has been for many years. I hope this means that even more students who care about sustainability will find out about us and ultimately choose to study here."

LEARN MORE about Humboldt State's commitment to sustainability:

humboldt.edu/green



Students Win EPA Sustainability Award

A TEAM OF HUMBOLDT State University students from the Renewable Energy Student Union has won a \$75,000 technology design award from the U.S. Environmental Protection Agency for a prototype smart-grid electrical system in Bhutan, a landlocked developing country between India and China.

The winning HSU students were awarded the maximum \$75,000 at the National Sustainable Design Expo in Washington, D.C., sharing honors and more than \$1 million in awards with Harvard, Clemson, Cornell, Drexel, Virginia Tech and Texas A & M.

HSU's award will finance installation of a low-cost, micro-hydroelectric

system in the village of Rukubji, Bhutan, over a period of two years. The project will evaluate the potential of GridShare technology at the village level.

The technology encourages electrical load shifting in two ways: it indicates the state of the grid to the user and prevents use of large appliances during brownouts. Overall, the objective is to spur villagers to ration use of high-powered electrical appliances such as rice cookers to help curb disruptive brownouts during peak hours of usage.

Based on a \$10,000 phase-one prize it won last fall, the HSU team was able to send three students to Bhutan to lay the groundwork for the project and cement

relationships with villagers.

The national competition, the sixth annual, is nicknamed the P3-Awards, for "People, Prosperity and the Planet." It encourages college students to create sustainable answers to worldwide environmental problems through technological innovations.

This is not the first time Humboldt has garnered national attention in the P3 competition. In 2008, a seven-member team received an honorable mention after winning a \$10,000 phase-one grant for a wind monitoring project to test Humboldt County's large potential for energy-saving wind farms.

Big Upgrades Coming to HSU Marine Lab

THE NATIONAL SCIENCE FOUNDATION, along with the United Plankton Foundation and the Desert Community Foundation, have together awarded over \$310,000 to HSU's Telonicher Marine Laboratory in Trinidad, Calif. The funds are being used to remodel the wet lab and acquire new display tanks to offer a better experience for nearly 15,000 visitors who pass through the lab each year.

"Students will have a vastly improved environment for carrying out their research," says Dave Hankin, Acting Associate Dean for Marine Sciences. "And we will now be able to put on more exciting displays for visitors than we've ever had."

The National Science Foundation grant for \$200,000 will go toward new tanks and lighting for the wet lab, where students study specimens such as oysters, urchins and a variety of fish. The funds are also being used for lab infrastructure, including tank stands, walkways, seawater pipes and electrical upgrades. Some of the new wet lab tanks are installed at wheelchair height, making the lab handicap accessible for the first time.

"In the past, we were limited in terms of what students could do," says Dave Hoskins, an equipment technician in the Marine Lab. "Now, students won't have to compromise. The facilities will really be top notch."

The \$100,000 gift from the United Plankton Foundation has paid for new display tanks for the public with a much larger viewing area than the previous tanks, installed in 1964. The Desert Community Foundation, based in Palm Desert, Calif., gave \$14,500 to fund new equipment for the wet lab.

"It's gratifying to see the increased support Humboldt State has received from private donors," says HSU President Rollin Richmond. "Gifts like these really make a difference for students, allowing us to offer them more hands-on experiences and ultimately making them better scientists."





President Richmond was on hand to confer degrees in Xi'an, China.

China's Humboldt College Celebrates First Grads

HUMBOLDT STATE UNIVERSITY AND China's Xi'an International Studies University awarded dual degrees June 28th in Xi'an to the first graduating class of the Chinese school's Humboldt College. The partnership allows Chinese students to complete their freshman year at their native school, spend the two middle years at HSU, then return to China for their senior year and earn bachelor's degrees from both universities.

HSU President Rollin Richmond called the 15 graduates citizens of the world. "We at Humboldt State believe that encounters with other cultures are an essential part of an examined life," Richmond told the audience at the Xi'an campus in northwest China. Xi'an is one of China's four ancient capitals and is home to the famed Terracotta Warriors.

Joined by Xi'an President Sishe Hu and Provost Liu Yuelian, Richmond saluted the students for their academic achievements, which, he said, "dissolved borders and boundaries and widened their intellectual horizons."

The dual-degree graduates majored in business or international studies while honing their skills in English on the Redwood Coast. Xi'an's Humboldt College is the cornerstone of a partnership established in 2006 for student and faculty exchanges, joint academic programs, mutual research and scholarship, and service projects. HSU faculty members teach on a regular basis at the new school.

The linkages sustain Humboldt State's long-term drive to internationalize the campus and encourage diversity and multicultural learning. Today, HSU has more than 60 students from multiple countries, versus some 35 early in the decade.

HSU Scores National Service Award

FOR THE THIRD YEAR running, Humboldt State University is the winner of the highest national honor that universities receive for contributions to service learning and civic engagement.

HSU has been named to the 2009 President's Higher Education Community Honor Roll by the Corporation for National and Community Service, a federal program launched in 2006 to foster community service and service-learning programs. Honorees are chosen on the basis of several criteria: the scope and innovation of service projects, the percentage of student participation in service activities, incentives for service and the extent to which the school offers academic service learning courses.

The HSU Service Learning Center is the on-campus clearinghouse that coordinates students' formal coursework with a host of community partnerships. The overall goal is to encourage student civic engagement and experiential learning with service assignments that promote social and environmental justice.

Annie Bolick-Floss, Service Learning Center director, said, "We have fabulous, engaged faculty and wonderful community partners who help enhance students' academic knowledge in serving local community needs."

Recognition of Humboldt State reflects the high level of student involvement. On-campus partnerships include 14 student-run community service programs under the aegis of Youth Educational Services, as well as volunteer activities supported in the campus's residence halls and many clubs.

The Princeton Review's "Best Colleges" series has recognized HSU as a "College With a Conscience" for its commitment to social and environmental responsibility.

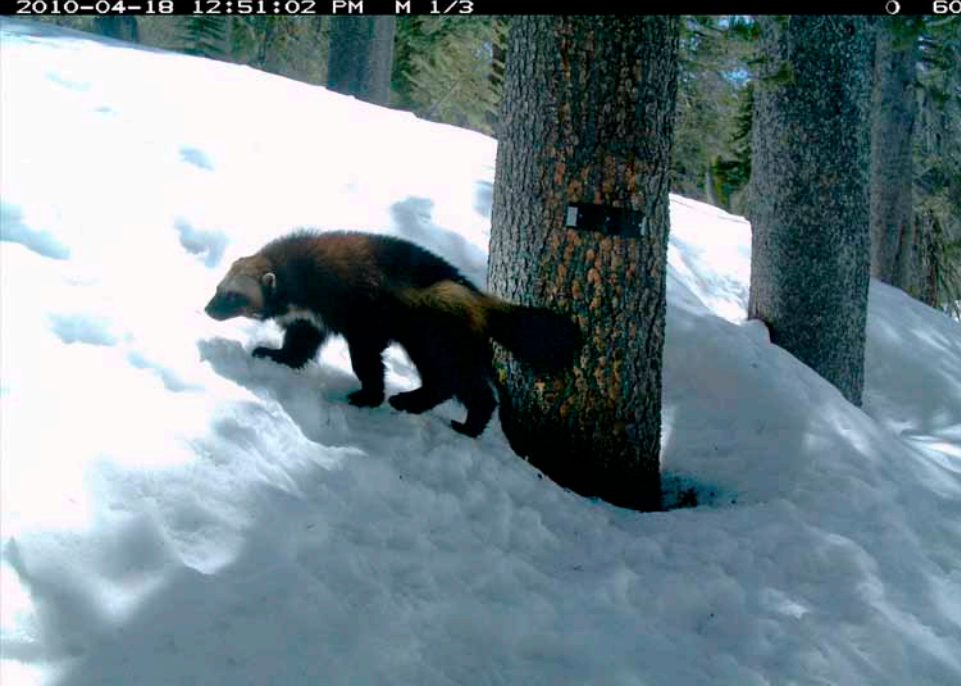


PHOTO COURTESY OF CHRIS STERMER, CALIFORNIA DEPT. OF FISH AND GAME

California's Lone Wolverine

FOR THE FIRST TIME in nearly 90 years, there has been a confirmed wolverine sighting in California – and an HSU alum made the discovery.

In Feb. 2008, Katie Moriarty ('04, Wildlife) captured images of the animal on research cameras in the Tahoe National Forest. She was using baited, motion-sensing cameras to track the effects of landscape change on martens when the wolverine appeared.

There had been no confirmed wolverine sightings in California since the last one was killed in the 1920s. Many believed the animal was extirpated, or locally extinct, since then.

After the sighting, Moriarty led a team of researchers to track the wolverine and collect hair and scat samples for genetic testing. Although it was speculated that this wolverine was a descendent of the California wolverine, DNA results proved otherwise.

"The unique thing about California wolverines is they're more closely related to those in Mongolia," Moriarty says. "You would distinctly be able to tell a California native from any other group."

Instead, researchers believe this wolverine is from Idaho, likely the Sawtooth range of the Rocky Mountains. That means the animal would have traveled over 500 miles to reach its current location near Truckee, Calif.

"Five hundred miles is not out of the realm of possibilities for the animal to travel," says Chris Stermer, Senior Wildlife Biologist for the Department of Fish and Game's Non-Game Wildlife Project.

In addition to walking the entire distance, the animal may have also wandered onto a truck or been released in the area. "It's anyone's guess," says Stermer, who pursued his master's in Wildlife Management at Humboldt State in the 1990s.

Ironically, this wolverine traveled such a distance that he is likely the only wolverine in the state. "Obviously, he's probably not going to find a mate very easily," Moriarty says.

Researchers are continuing to expand their survey areas to determine whether or not this animal is in fact California's lone wolverine.

Alum Takes Top Job at North Dakota State University



PHOTO COURTESY OF NORTH DAKOTA STATE UNIVERSITY

WORKING ON THE HSU

campus one summer, Dean Bresciani ('84, Sociology) stumbled upon a career path that has been his passion ever since.

The Napa Valley, Calif. native was recently named President of North Dakota State University. "It's

something I've worked for my entire life," he says, and it was an unexpected summer job at Humboldt that got him started.

"I was involved with the Humboldt Orientation Program, HOP. I did that, to be honest, to avoid working for my dad over the summer," he recalls. "But the light went on. I got excited about helping students succeed in college."

After HSU, Bresciani went on to earn a master's degree from Bowling Green State University and a doctorate in higher education finance from the University of Arizona, at Tucson. He has held several administrative positions throughout the years, including Vice President for Student Affairs at Texas A&M University.

One of Bresciani's graduate students in Texas had earned her undergraduate degree at North Dakota State, and she was the first to recommend he apply for the presidency there. "I took that as the ultimate compliment," he says.

Helping students achieve success wasn't the only passion Bresciani discovered at Humboldt State. Redwood Park and Patrick's Point stand out as the places that fueled his love of hiking, running and rock climbing.

"Most people who meet me wearing a suit and tie would never guess that I'm into rock climbing," he says.

In addition to climbing, Bresciani has backpacked throughout the western United States and Alaska. He has even led a few student groups on backpacking adventures.

And his time at Humboldt State was the spark that ignited his zeal for working with students. "Without the type of experience or opportunities I found at HSU, I might have never found my life's calling."

Pig Waste Project Powers New Business



NOT EVERY MASTER'S THESIS turns into an award-winning sustainability enterprise. But that's just what happened for alum Alex Eaton

('09), who earned his master's degree in Environmental Systems.

The biodigester that Eaton designed, which turns pig waste into a fuel source, won first place out of thousands of submissions in the Business in Development Network's Clean Energy Challenge in June. In addition to the \$10,000 award, Eaton was flown to the Netherlands to meet with venture capitalists interested in socially responsible projects.

Eaton, who grew up in New Hampshire, was in Mexico on a surfing trip when he began volunteering for the non-profit International Renewable Resources

Institute (IRRI). He is now the executive director.

In Mexico he spent time on pig farms conducting research for his master's thesis. For that project, he designed a small biodigester, which takes dung mixed with water and, using anaerobic bacteria, produces methane. That, in turn, can be used by a family as a fuel source for cooking and heating. The process also acts as a waste treatment system, with the end product being organic fertilizer that can be safely used on crops.

With the success of his biodigester, Eaton decided to make it commercially available for small, family farms. To do that, he had to write a business proposal, which is where the Clean Energy Challenge came in.



PHOTOS COURTESY OF ALEX EATON

His new company, Sistema Biobolsa, opened its doors in April and has plans to develop a plant in Kenya this year.

"I was always the pig s--- guy," says Eaton. "Now, seeing the response to my work, it has finally paid off."

Undergrad Inspires Changes at Major Jewelry Retailer

BRADEN PITCHER RECENTLY GOT one of the biggest surprises of his life.

Zale Corporation, the country's second largest jewelry retailer, has adopted a more socially responsible gold purchasing policy – all because of the HSU junior's Natural Resources Conservation final paper.

Pitcher's assignment was to write a brief study on an existing conservation project. A longtime lover of Alaska, he focused on efforts to stop the controversial Pebble Mine project in Bristol Bay, Alaska.

There were concerns that the proposed mine would disrupt fishing and wildlife jobs. But it could also have serious negative effects on one of the world's largest Sockeye salmon runs. "The more I learned about the project," Pitcher says, "the more I felt I had to do something about it."

So he did.

Pitcher found an online pledge designed to help jewelry companies boycott



PHOTO COURTESY OF ALASKATREKKER AT EN.WIKIPEDIA

Bristol Bay, Alaska, site of a controversial proposed gold mine.

minerals from Pebble Mine. No Dirty Gold, an organization promoting the responsible sale and purchase of gold, created the pledge. And Pitcher's mother, a purchaser for the Zale Corporation, was able to get him a meeting with the vice president of the company to persuade him to sign.

Even after the meeting, there was little progress. "I did everything I could do," Pitcher says, "but I felt like I was getting brushed off."

Finally, in March, Pitcher received the news that the Zale Corporation, whose 2,100 stores and kiosks earned \$48 million in 2007, had decided to sign the Bristol Bay pledge. "Not only did they sign," Pitcher says, "they basically increased oversight on gold supply and made the process more transparent."

The Zale vice president he had met with later told Pitcher that his "input and persistence were instrumental" in the decision.

campus scene

Inside the diving program

HUMBOLDT STATE HAS A flourishing dive program, attracting students from every major. Many go on to advanced training, becoming certified scientific divers, landing internships with government agencies and aquariums – one alum even leads dives for Blackbeard Cruises in the Bahamas. Before anyone gets a chance to dive in the rough ocean waters of the North Coast, however, they spend hours training in HSU's new pool in the Kinesiology & Athletics building.

► **STUDENTS TAKE TESTS UNDERWATER** using special waterproof paper and regular pencils. They could take the tests in a regular classroom, but students thought it would be more fun this way.

► **THE DIVE CLUB ON** campus once hosted a party underwater – complete with a game of Twister.

► **ONE COMMON EXERCISE: ALL** students swim in a circle, while in the center, two students practice skills like removing their mask and regulator, sharing air with a buddy and adjusting weight belts (it can take a weight belt of 30 pounds to offset the buoyancy of a 7mm wetsuit).

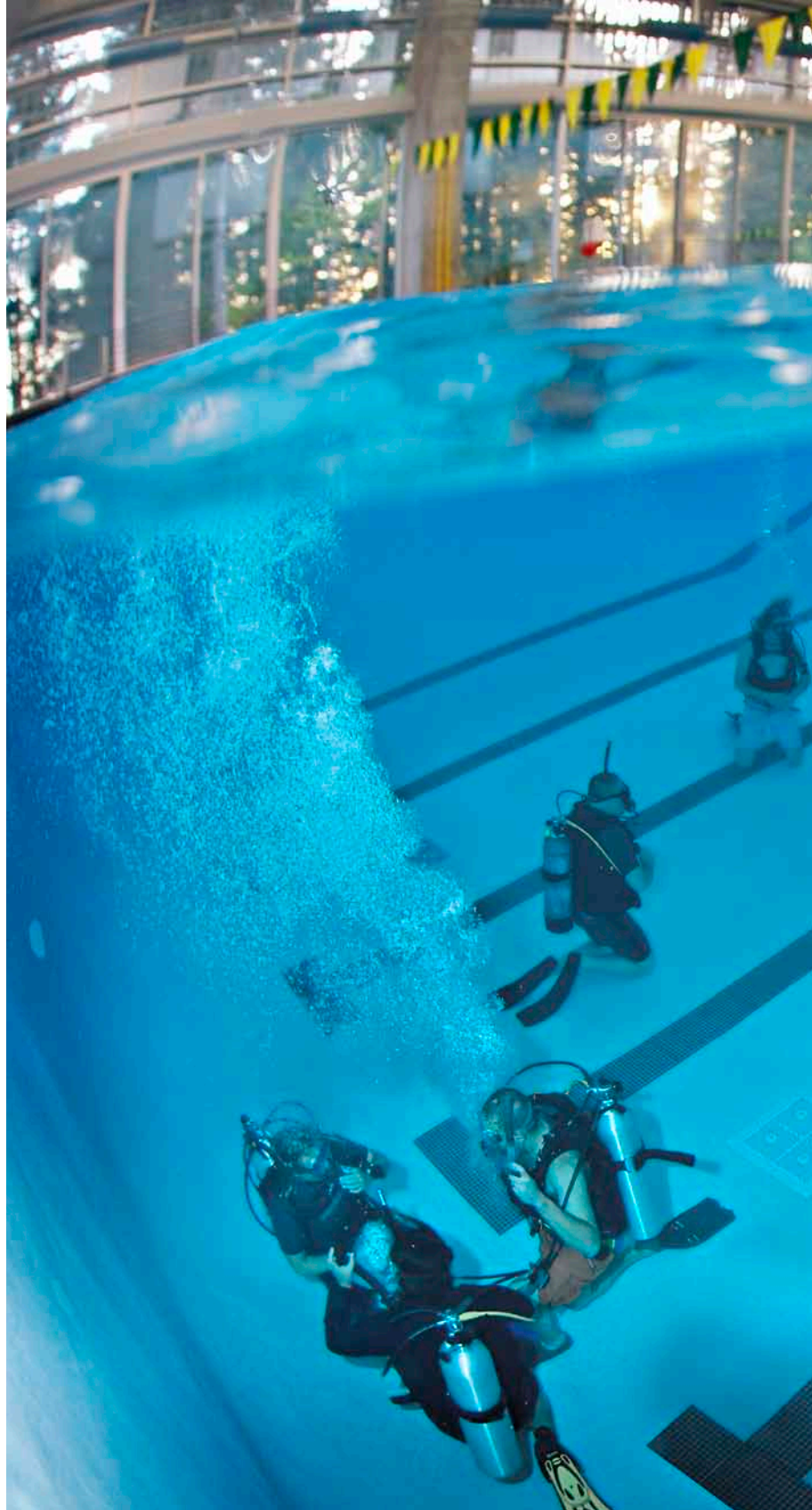
► **THE NEW "WET CLASSROOM,"** with its cement floor, plastic chairs and location next to the pool, is designed for dripping students. They're just not allowed near the computer.

► **STUDENTS NEED THEIR WETSUITS,** even in the heated pool. Turns out that 82-degree water can still get cold if you're immersed in it for a two-hour-long class.

► **AMONG THE SKILLS THAT** advanced students must master: diving blind. To simulate the dark, murky conditions that limit visibility, students dive in the pool with paper towels stuffed in their masks.

► **THE UNDERWATER RECALL SYSTEM** is designed to summon divers in open water back to the boat. You can also plug an iPod into the device and listen to music underwater, which came in handy in the pool at the end-of-semester Dive Club party.

► **UNTIL THEY BUY THEIR** own gear, students check out equipment much like taking a book out of the library.





Meeting the Neighbors

By Jarad Petroske

Dawn Goley and her students
take stock of marine mammals
along the North Coast



THE SEARCH FOR STELLER SEA LIONS begins with analyzing the weather. In Humboldt County's unpredictable summer conditions, that can mean starting out at 4 a.m. after a good weather report, only to learn about 15-foot seas from the NOAA buoy moments after setting out. When you're the primary scientific team studying marine mammals along 400 miles of California's coast, you have to be ready at a moment's notice.

And that study is exactly what Professor Dawn Goley and her team of students are undertaking with the Marine Mammal Education and Research Program at Humboldt State University. Their long-term goal is to conduct baseline studies to better understand the ecology of marine mammals that live here on the North Coast. Their short-term goal is to get out on the water, and right now would be nice. Luckily, today, the weather cooperates.



Sea lions dot the surface of Redding Rock, five miles offshore from Gold Bluffs Beach north of Orick, Calif. Approaching the rock, the smell of bird guano and sea lion dung can be overpowering. But it's important to stay downwind of the animals, so they don't catch the scent of humans and swim away.



ON A FOGGY AND gray day with passable ocean conditions, we hit the water with Goley and graduate students Allison Fuller and Carrie Hudson. The trip will take us from Trinidad Head to Point St. George Lighthouse, seven miles off the coast at Crescent City. Part of the day's mission is to survey populations of Steller sea lions for Fuller's graduate research as well as to collect data on gray whales. The data produced by these studies, funded by the National Marine Mammal lab, will also be used by a network of researchers up and down the coast. To understand the significance of a professor and a few students in a Zodiac inflatable boat off the coast of California, one must consider that as recently as 15 years ago, little was known about the populations of marine mammals in this part of the Pacific.

Diving Into Open Waters

IN 1996 DAWN GOLEY came to HSU to broaden the Biology department's reach into marine mammal science after the retirement of Professor Jake Houck years before. Having focused on the behavior of Pacific White-sided dolphins while earning her doctorate at UC Santa Cruz, Goley found that dolphins rarely visit the nearshore waters off the Humboldt coast. So she established long-term studies to document the natural history of marine mammals on this stretch of coastline. With her first three graduate students, Goley created the Marine Mammal Education and Research Program, a formal scientific organization that could delve into the world of marine mammals along the North Coast.

"Undergraduates were banging on my door for research experience, so after I created the program, I invited them to join our team. They gained valuable field experiences and I and my graduate students benefited from the enthusiastic and dedicated assistance. The science and the students were both well served by us working together," says Goley. "With so



Professor Dawn Goley and graduate students Allison Fuller and Carrie Hudson attempt at least two sea cruises each week as part of their ongoing surveys of marine mammal populations.

much coast to cover and the long-lived and highly mobile nature of marine mammals, this collaborative approach has helped us fill in the gaps in our knowledge."

Marine mammals are notoriously difficult to study, because many travel widely as part of their normal migration patterns – and they live so long. In the north Pacific the conditions at sea often preclude consistent contact with the animals as well. These factors place even more importance on creating a larger community of researchers who must work together to collect data and share their findings.

"It's like starting with a box of puzzle pieces, and it takes a long time for a picture to emerge," says Goley. "But now that we know more, we can ask more detailed questions about their ecology and behavior."

Much of the early research was done in response to the reauthorization of the Marine Mammal Protection Act. Passed in 1972, the MMPA was the first piece of legislation to effectively

halt the harvesting of all marine mammals in the U.S. By 1994, the act was up for reauthorization and members of Congress set about refining the bill.

After more than 20 years, the MMPA had worked well for some species and not so well for others. Specifically, some populations of seals and sea lions off America's west coast were thought to have increased beyond historic levels and, in some cases, were potentially feeding upon endangered salmon. Political leaders sought input from the scientific community to inform the reauthorization process.

"I came up here at a time when we knew very little about the marine mammals along the coast and was met with a federal mandate to describe the abundance and actions of the local seals and sea lions. How big were the populations? Were they eating endangered salmon? And if so, what impact were they having on these populations?" Goley says. "I was charting new waters in my career when I first arrived, and I have been engaged in and loving this type of research ever since."

The Marine Mammals of California's North Coast

THE ROCKY SHORES OF the North Coast are home to an array of inhabitants. Here are some of the marine mammals most commonly sighted in the region. Of course, this list isn't comprehensive. According to HSU's Telonicher Marine Lab, humpback, sperm and blue whales, dolphins, porpoises and even orcas can be spotted on the North Coast.

Illustrations by Pieter Arend Folkens



Steller Sea Lion
Eumetopias jubatus

LISTED AS A THREATENED species, these marine mammals breed on the North Coast, and both the males and females live here. Yellowish in color, with a rounded head, their size sets them apart: the male Steller sea lion can reach 11 feet long and weigh almost 2,500 pounds. Like California sea lions, they walk on all fours when on land and have external ear flaps.



California Sea Lion
Zalophus californianus

THESE INTELLIGENT AND PLAYFUL creatures can be spotted surfing waves or performing for audiences at aquaria. They don't breed on the North Coast but the males are regular visitors to our shores (you won't see females here). Their faces resemble dogs'.



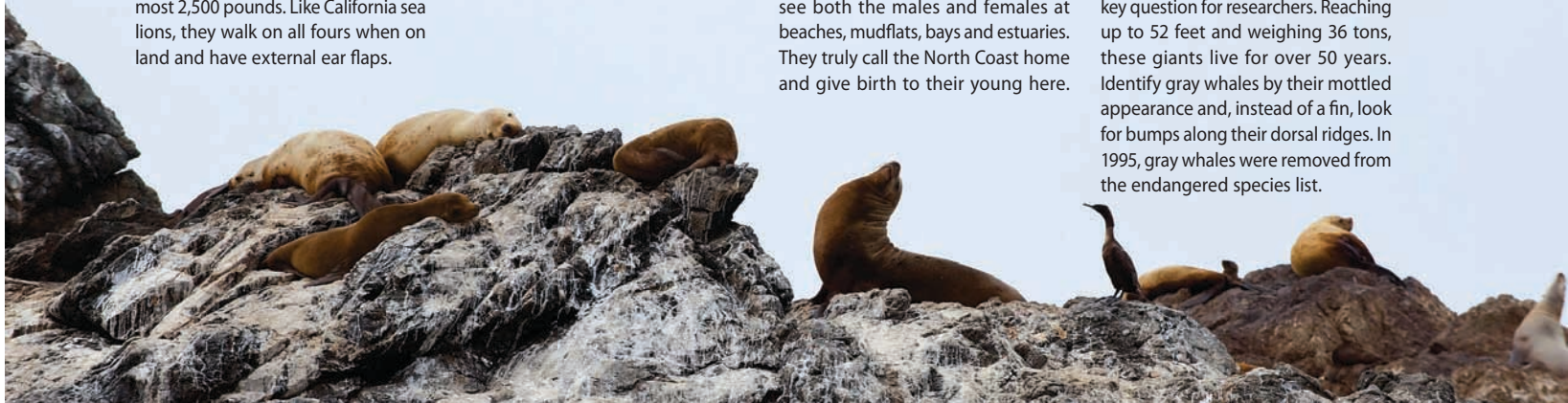
Harbor Seal
Phoca vitulina

HARBOR SEALS CAN BE identified by their mottled coats that range from gray to dark brown. They lack external ear flaps and move on land by pulling only with their front flippers, dragging their bellies behind. Since they favor near-shore waters, you'll see both the males and females at beaches, mudflats, bays and estuaries. They truly call the North Coast home and give birth to their young here.



Gray Whales
Eschrichtius robustus

DURING THE SUMMER, GRAY whales feed in the near-shore waters of the North Coast, the southernmost edge of their feeding area. Some make the 12,000-mile annual migration from Alaska to their Baja California breeding grounds, but some forgo migration – a key question for researchers. Reaching up to 52 feet and weighing 36 tons, these giants live for over 50 years. Identify gray whales by their mottled appearance and, instead of a fin, look for bumps along their dorsal ridges. In 1995, gray whales were removed from the endangered species list.



Chasing the Pack

OUT ON THE WATER, the fog keeps much of the coast shrouded as we move north toward the rookery of the Steller sea lions – where they give birth – and their haul-out sites, where they leave the water for temporary respite on land.

With its twin outboard motors, the boat drones as the team takes its first survey of the day at the Turtle Rocks, a mile off the coast of Patrick's Point. Spotting no seals or sea lions, the team quickly decides to press on toward Redding Rock, five miles offshore from Gold Bluffs Beach at Prairie Creek Redwoods State Park.

Graduate student Allison Fuller is at the helm. Through MMERP, she's become a certified boat pilot and is at ease maneuvering the Zodiac. "I've made the trip to Redding Rock at least 30 times. Maybe even 50 times," she says, hinting at the dedication required to conduct this sort of long-term survey.

Becoming skilled at operating watercraft isn't part of most students' undergraduate or even master's-level work. Asked what she gets out of her involvement with MMERP, Fuller pointed to the possibilities the program affords.

"I am beginning to see what a unique opportunity it is to work on my project at Humboldt State," she says. "It began with tagging along on Steller sea lion and gray whale surveys a few years ago, to now actually being able to operate the boat and conduct surveys. I have definitely become more marketable in the marine science job field."

As Fuller approaches Redding Rock, she cuts the motor and picks up her digital camera with its 400mm lens. She's looking for the marks that identify individual sea lions.

"I love getting to see the Steller sea lion bulls show up to hold their territories and the females with their pups. To see a marked animal that we have seen year after year – it's enthralling," says Fuller.



ABOVE LEFT: Groups of sea lions take rest breaks on coastal rocks, known as “haulouts.” While many rocks serve as haulouts, seals and sea lions only choose specific sites for rookeries, where they give birth to their young. **ABOVE RIGHT:** This cow and calf pair of gray whales was spotted off the North Coast. While most gray whales migrate seasonally, a small proportion forgo full migration – but no one knows why. Goley has spent 12 years researching the reasons why some whales don’t summer along the North Coast.

Goley and her team also work closely with the National Marine Mammal Laboratory and the National Marine Fisheries Service on coastwide initiatives focused on understanding the population dynamics of gray whales and Steller sea lions – so a trip of this nature can inform a number of different projects and lend valuable field experience to graduate and undergraduate students at HSU.

“Together we can really make a difference in the local and coastwide understanding of the role that local marine mammals play in the larger picture,” says Goley, adding that these studies are long-term by their very nature. Pinnipeds, fin-footed marine mammals, can live 30 to 40 years. To truly understand such a population, the MMERP students attempt two sea cruises per week, as well as shore-based surveys conducted by undergraduates and volunteers.

Contributing to the Bigger Picture

THE WORK THAT GOLEY and her students conduct through MMERP contributes to a larger understanding of the environmental health of the region, which in turn empowers policy makers to set guidelines knowing they can rely on the quality of scientific data.

As a member of the Marine Life Protection Act’s Science Advisory Team, Goley relies on information collected by her team to assess proposed sites. The assessments will help inform legislators as they attempt to define protected habitats. The main goal of the MLPA, passed by California legislators in 1999, was to move from single-species management to an ecosystem-based management. Understand-

ing which animals are here, and when and why, is a big part of that mission.

Locally, the data are useful in informing decisions on the location and potential impacts of major projects, like Pacific Gas & Electricity’s proposed wave energy project. Although in its preliminary planning stages, PG&E’s project and others of similar scope will require a basic understanding of the marine habitats of the North Coast and the inhabitants of its waters. Such knowledge is critical to ensuring that any development will minimize, or even eliminate, harm to wildlife.

Beyond contributing to these large initiatives, MMERP serves to launch students into careers in science.

“Marine mammalogy is an incredibly competitive field and students usually don’t have access to training or fieldwork until well into their master’s or Ph.D. programs,” says Goley. “Many of our students have pursued careers in marine mammal science and say that their experience at HSU has opened doors for them. It feels good to know that our alumni have and are still contributing to important research programs around the world, including the Endangered Right Whale research project, the Hawaiian Monk seal project and Arctic Seal ecology. They were able to take the opportunities at HSU and not only find a fulfilling career, but give back to the animals that we all care about so much.”

Now, after more than 200 students have participated in this research since Goley arrived at HSU, they are starting to fill the gaps in knowledge. Students have truly become contributing scientists helping to inform greater coastal initiatives.

Sighting New Life

IN OPEN WATER, GRADUATE student Carrie Hudson hears the blow of a nearby gray whale that just surfaced. "It must be only a couple of hundred yards away," she says.

The cloudy skies have persisted, but their reflection on the water makes it easier to spot the silhouettes of mother and calf gray whales that surface briefly.


To gather critical information about marine mammals, Goley and her team often need to approach closely. This, and all marine mammal research, is conducted under a National Marine Fisheries Service permit that grants special permission and responsibilities to scientists studying these animals.

Even so, to the untrained eye, it's not a spectacular sighting. There were no majestic leaps from the water, no tail fins crashing into the waves. But to the researchers aboard the Zodiac, it is a more-than-satisfying glimpse

Before this study, little was known about the population of marine mammals in this part of the Pacific.

at these two whales. When the images make it back to the lab, the researchers will use the white specks on the backs of the whales to identify each individual. The fact that this pair was mother and calf is of no small significance to

scientists who want to know how gray whales use the North Coast and why some linger while others migrate on to Arctic waters to feed in the summer.

"Many of these whales are familiar to us as they visit here regularly, while others we have seen only once in our 12 years of study. Knowing the ways that marine mammals use these waters will make a profound difference in how we manage our coastal areas. These are the questions – the ecology of summering whales and of Steller sea lions and harbor seals – that will keep me and my students excited and searching for answers for many years to come." 

Leading the Response to Whale Strandings

IN ADDITION TO STUDYING the ecology of marine mammals, Professor Dawn Goley serves as the HSU stranding coordinator for NOAA's Marine Mammal Stranding Network. Goley, along with students, volunteers and marine wildlife specialists, helps recover whales that strand along the North Coast

Although it can be a tragedy to see these majestic creatures washed up on shore, these events provide the National Marine Fisheries Service stranding network with critical information about the animal and cause of death. They also provide research and educational materials to scientists around the world, the HSU Vertebrate Museum and HSU students and community members. Recent major strandings include:

September 2007

Pilot whale washes up on Luffenholtz Beach

PILOT WHALES ARE NOT typically found in North Coast waters. When this one washed ashore, it provided an unusual opportunity for study, and researchers were keenly interested. After forensic analysis and an MRI of its skull, it was determined that a massive ear infection likely killed the 15-foot whale. Its skeleton will eventually be reassembled in the HSU Vertebrate Museum.

March 2009

Gray whale calf found at Houda Point

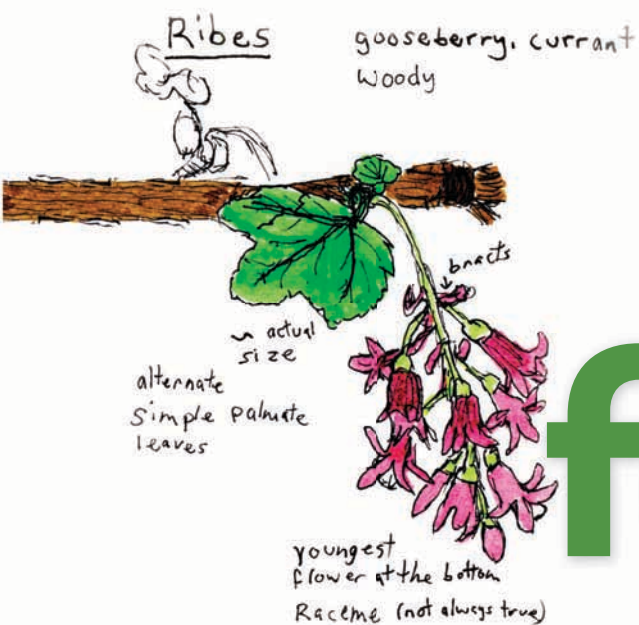
WHILE SPOTTING A GRAY whale off the Humboldt County coast is not rare, a calf washing ashore is. The word quickly went out on campus that all mammalogy labs on this day would meet at Houda Point to investigate. Students found themselves knee-deep in water, looking for evidence of what killed the calf, but as in many cases, the cause of death remains undetermined. When students and staff from the HSU Vertebrate Museum later returned to the site to retrieve the skeleton they had buried, it was gone. It turns out that its young bones had not ossified yet, and they had already dissolved away.

October 2009

Blue whale washes ashore on Mendocino coast

THE DEATH OF THIS 72-foot female blue whale generated headlines from the San Francisco *Chronicle* to ABC News, and the entire Fort Bragg, Calif., community joined together in response. A group from HSU helped to collect samples and bury the carcass, allowing microorganisms to strip the flesh from the bones. Eventually the skeleton will be exhumed and displayed in Mendocino County.





fertile minds

By David Lawlor

Illustrations by HSU Student
Jade Paget-Seekins

With the nation's largest botany program, Humboldt State is cultivating the next generation of plant experts.

IF YOU HAD TO NAME the top botanist of all time, who would you pick? The obvious choice, would be the sly and debonair Leonhart Fuchs, but, then again, Otto Brunfels's observations were groundbreaking too. And then there's Hieronymus Bock – he developed his very own classification system. He's got to be in the running.

Never heard of these people? You're not alone. While we live among a sea of plants, grasses, algae and fungi, modern society's knowledge of the natural world, and hence the field of botany, is pretty limited. But at Humboldt State, these groundbreaking botanists are a big deal. A core of dedicated professors and students are ensuring the world is kept in steady supply of well-educated, highly trained botanists.



Students study plant specimens in HSU's greenhouse as part of a class led by instructor Robin Bencie. This geodesic dome houses the University's extensive collection of subtropical plants, one of eight different climatic zones represented in the greenhouse.

"We call it removing the green blurs - the students' understanding of botanical life starts off blurry and then we just keep adding layer upon layer of knowledge and it gets sharper and sharper."

Professor Frank Shaughnessy



CLOCKWISE FROM TOP: A phycology class studies intertidal algae samples at Baker Beach near Trinidad, Calif. | A mycology class field trip in a coastal spruce forest turns up these varied fungus specimens. | A plant ecology class spends a Saturday collecting and identifying plants in the Manila Dunes.

Largest Undergraduate Botany Program in the Nation

HUMBOLDT STATE'S BOTANY PROGRAM is home to an 11,500-square-foot greenhouse containing about 1,800 plant specimens, a 2,500-square-foot research greenhouse and the largest vascular plant herbarium in the California State University system with nearly 100,000 specimens. It's these unique teaching and research facilities, coupled with dedicated professors who are experts in their fields, that have allowed Humboldt State to become the largest undergraduate botany program in the United States. With 112 students choosing the major, HSU's program is home to more future botanists than any other campus including Ohio University, the country's next largest program with 80 enrolled majors, and UC Berkeley, with 60 students.

"We have a broad selection of botanical courses from which a student may choose; our breadth is exceptional," says Professor Casey Lu, chair of the Department of Biological Sciences, which houses the botany major. "We also have a really strong and in-depth lab component in the majority of our courses and that's something we've tried to retain."

The program's ambitious scope and well-deserved reputation was built over decades by professors passionate about and committed to studying plants. Lu credits HSU botany professors such as David Largent, Robert Rasmussen, John Sawyer, James Smith, Dennis Walker and others, for establishing the nation's premier undergraduate botany program.

"Botany has been a strength at HSU for a long time. Our strength came from the previous cohort of professors," Lu says. "We're just trying to carry on that tradition."

Removing the Green Blurs

"USUALLY, WHEN STUDENTS ARRIVE at our program they sort of know about plant life, but not too much," says Professor Frank Shaughnessy, a marine algae and seagrass specialist. "Then you get a professor explaining how these organisms work and how they're put together. We call it removing the green blurs – the students' understanding of botanical life starts off blurry and then we just keep adding layer upon layer of knowledge and it gets sharper and sharper."

Shaughnessy explains that the entry-level botany courses help students build a strong science foundation, gaining an in-depth understanding of the various organisms they will study during their academic careers. Hands-on learning, both in the lab and in the field, is a major component of the program and another reason it has been so successful.

"With our greenhouse, forest walks, trips to coastal intertidal areas, alpine zones – I'd say we have more field time than other botany programs simply because we can," Shaughnessy says. "We have a spectacular natural setting and it would be ridiculous to not take advantage of it and that's one of the things that makes us unique. Other programs can't do that as inexpensively as we can."

Once students are enrolled in the botany program, the University's facilities, its natural setting and an abundance of research opportunities keep them busy and interested. But why do students choose to come to HSU to study botany in the first place?

"The students are interested in life, protecting it and working on environmental problems," Shaughnessy says. "The desire to save the world is definitely something that our students bring here to HSU – they're defining us in that way. That's what attracts them to Humboldt."

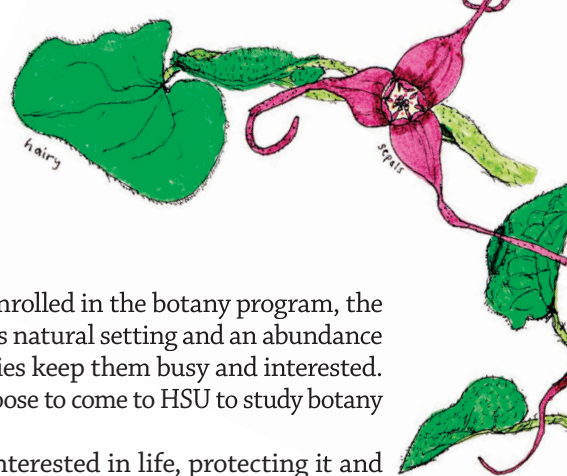
The North Coast: A Mycologist's Paradise

IT'S HARD TO IMAGINE a better place to study mycology than Humboldt State. With a distinctive coastal climate that provides ample opportunities for fungi to proliferate, students are able to get unparalleled hands-on experiences in the field, often just minutes from campus. Largent, who developed the mycology specialization at Humboldt State for decades up until his retirement in the 1990s, left in his wake a robust program that regularly produces some of the world's top mycologists. For example, one of Largent's former students, Professor Timothy Baroni of State University of New York, Cortland, recently discovered a genus of polypore mushroom while on an expedition funded by the National Geographic Society in the remote mountains of Belize.

Upon Largent's retirement, Professor Terry Henkel took the reins and now heads the mycology program. While completing his doctoral dissertation at Duke University in North Carolina, Henkel found out about the opening for a mycology professor at HSU and was immediately excited about the opportunity.

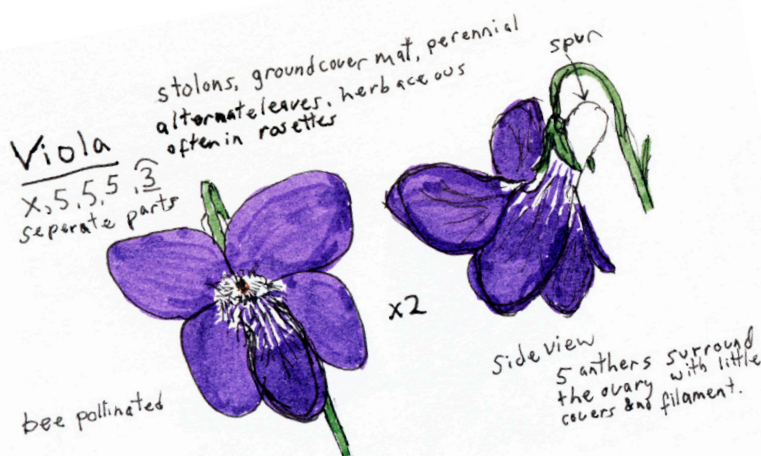
"If you're into field-oriented biology, especially botany, and good training at the undergraduate level in a traditional broad sense, you know about this school," Henkel says. "One of the reasons is that you run into people who are Humboldt graduates all over the place. They're either working for federal agencies as staff botanists or you meet a number of people that went on to graduate schools who are now professors, and that's especially true for mycology."

Henkel sees his charge as carrying on the tradition started by Largent of educating highly skilled mycologists that go on to be leaders in their field. Aside from time spent in the classroom and lab, Henkel takes his students on numerous field trips every semester to identify and collect fungal specimens. One of his classes even takes its final exam in the field during an overnight camping trip at a local collecting spot near the Smith River. Henkel guides his students on a mushroom hunt during the first day of the excursion and has the collected specimens laid out at the group's campsite the following morning complete with accompanying test questions.





ABOVE: A student prepares to dissect a flower under the microscope. Pressed plant specimens from HSU's extensive teaching collection hang on the wall. BELOW: In class, both live and pressed plant specimens are available for learning identification skills. Students dissect live specimens, and then practice sketching them in their notebooks. The illustrations for this article came from sketches student Jade Paget-Seekins made in her plant taxonomy course.



"We've got the perfect collusion of ecosystems and climate," Henkel says. "We can rely on fresh material for nearly everything. If we want to study specific fungal groups, at almost any given time of the academic year we can go out and collect representatives either as a class or myself with lab assistants. Very few other places in the entire country can boast that."

Mycology students have had remarkable research opportunities with Henkel in Guyana, where the professor travels annually to collect specimens. He began visiting the South American nation while working on his Ph.D. at Duke and has brought a number of students with him on expeditions since coming to HSU. The country, with its pristine tropical rainforests, is rich in biodiversity and home to large numbers of yet-to-be-identified fungi. Several of Henkel's students have crafted their senior or master's theses based on research conducted in Guyana, with more than 45 species or genera new to science formally described so far.

"I have well-performing students in my courses who have a strong interest in tropical field experience," Henkel says. "These students are aware of my field program in Guyana, as I regularly insert our research findings into my mycology courses. After a rigorous screening process, a group is selected to participate in a summer expedition. Their tropical field experience is unparalleled and has led to numerous students co-authoring peer-reviewed papers."

Spreading the Botanical Word

WHILE HUMBOLDT STATE PROFESSORS and students are passionate about botany, modern society doesn't regard the study of plants as highly as it once did. Motivated by economic factors, if botanical researchers aren't pioneering new medicines or foods, Lu says, outside interest is limited. However, Lu and Shaughnessy stress the continued need for professional botanical scientists in a variety of settings including working with government agencies and environmental firms.

"Botany faculty have a missionary zeal because we know how important plant life is," Shaughnessy says. "Thanks to the media and our popular culture, we know that most people have a very incomplete understanding of the life around them and its importance to their own survival. We are very aware of this operating environment and thus we need to have a real passion for our discipline."

So, even if you didn't know that Fuchs, Brunfels and Bock are the three recognized fathers of modern botany, don't feel too bad. In a world where plant life is often disregarded unless it fails to generate economic returns, having basic knowledge about the ferns, algae and fungi that make up our natural environment is more useful than remembering the names of three long-dead German scientists. With Humboldt State's 112 eager students and its team of dedicated botany professors on the case, the discipline's foundations will continue to be strong. **H**



LEFT: Professor Terry Henkel leads students on a mushroom hunting trip in his class Botany 359: Biology of Ascomycetes and Basidiomycetes. Ascomycetes include such delicacies as morel mushrooms and truffles, while basidiomycetes include many of the familiar “gilled” mushrooms characterizing the North Coast region. **TOP RIGHT:** Some mushrooms, like this *Clavulina* species, have coral-like fruiting bodies which produce spores from the surface of the branches. **BOTTOM RIGHT:** A student holds a specimen of *Podostroma alutacea*, a wood-decaying ascomycete common on the forest floor.

Field Testing

GIVE PROFESSOR TERRY HENKEL a downed tree, a little fungi and a mystery to solve and he turns into a mycological version of the Crocodile Hunter meets Sherlock Holmes.

But with Henkel, you also get quizzes.

“It’s pretty much a clean snap,” he tells students during one outing, as they peered up at a broken hemlock in Redwood National Park. “I’m almost certain if you could get up there and look at that broken part you’d find a nice decay column and maybe some cubicle brown rot. We can’t tell for sure because we can’t see the crown of the tree....” Henkel pauses, then points in excitement after spotting the tree’s crown in an adjacent ravine. “Let’s go check it out.”

About 40 students in Henkel’s course on Biology of Ascomycetes and Basidiomycetes

follow him down into the gully. With sun refracting through the forest, the students – most clad in hiking boots, fleeces and bulging backpacks – take notes and chat. They’re botany majors, so this is just one Saturday among many they will spend in the field.

“I know the fungus already!” Henkel shouts as he nears the fallen crown. “There’s a definite decay column. This rot looks like stringy, spongy white rot that is associated with *Armillaria*,” he says, digging at the log with his pocketknife. “It’s spread inequilaterally in the bole. I want to get a good diagnostic indicator of the *Armillaria* rhizomorphs to try and see what happened to this tree.”

Soon after, it’s back to the trail for more fungi hunting. The group splits into small groups and, after a half-hour of traipsing

through odoriferous swamps and squinting to spot unusual specimens, the students gather again to display their finds.

Henkel takes a quick look at what they found. Then it’s quiz time.

“You’ve had plenty of time to study this one,” Henkel says as he holds up a translucent, gelatinous mushroom. “Look at the fruiting body. It’s got a laterally attached stipe, it’s clearly rubbery in texture, and has a dentate hymenophore. The basidia, under the microscope, have longitudinal septations. We talked about two orders that can have that basidium type. So, if you can tell me the name of either of the two orders among the jelly fungi that have longitudinally septate phragmobasidia, you’ll get the question right.”

“Can we get extra credit if we name both orders?” asks a student.

PRESSURE POINT



CURRENTS

SEEKING LESSONS, PROFESSOR LORI DENGLE TREKS INTO AFTERMATH OF BIG QUAKES

by Paul Mann

The 15-story Alto Rio apartment building in Concepcion, Chile, was destroyed in the magnitude 8.8 earthquake. The building has since been demolished.

PHOTO CREDIT: MARTIN BERNETTI/AFP/GETTY IMAGES

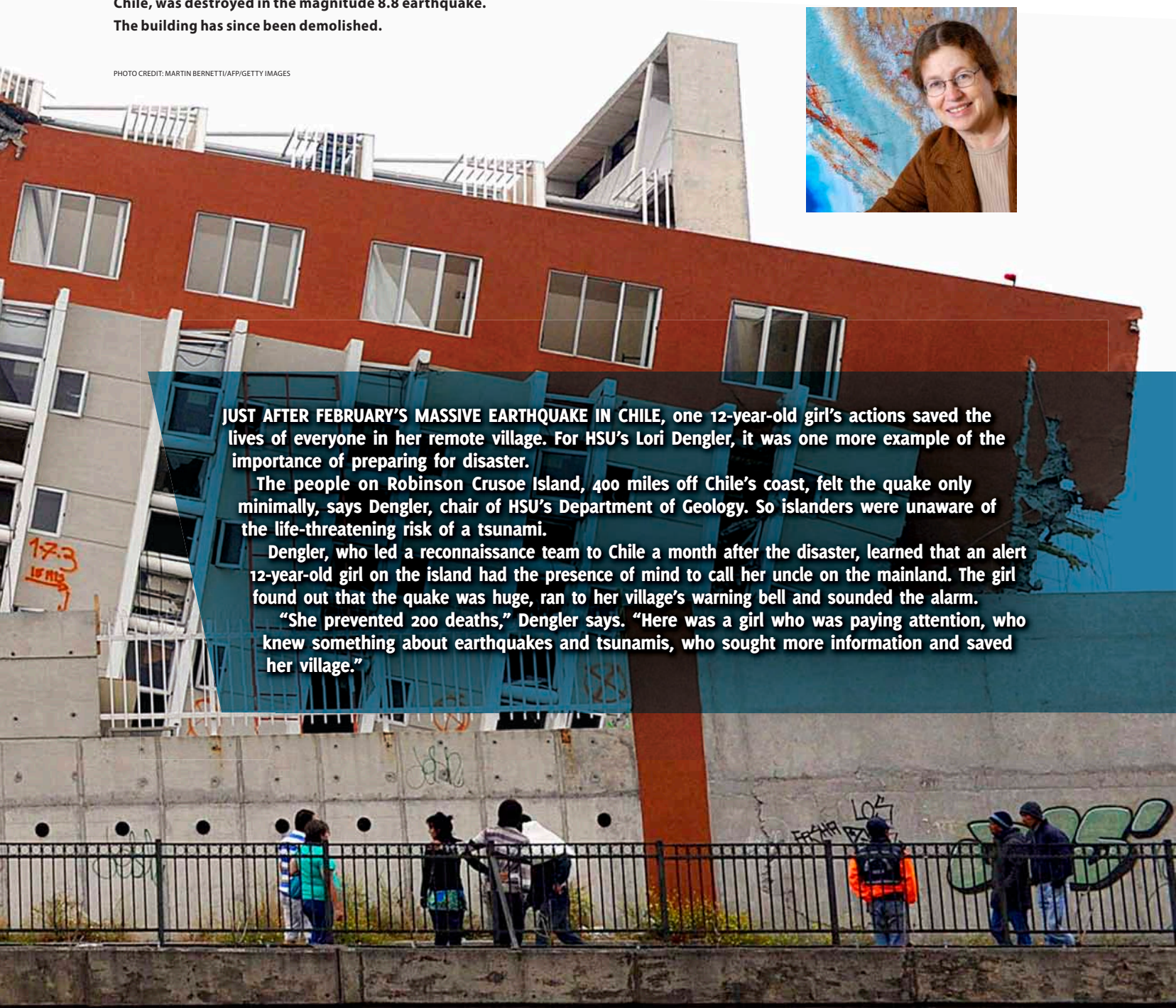


JUST AFTER FEBRUARY'S MASSIVE EARTHQUAKE IN CHILE, one 12-year-old girl's actions saved the lives of everyone in her remote village. For HSU's Lori Dengler, it was one more example of the importance of preparing for disaster.

The people on Robinson Crusoe Island, 400 miles off Chile's coast, felt the quake only minimally, says Dengler, chair of HSU's Department of Geology. So islanders were unaware of the life-threatening risk of a tsunami.

Dengler, who led a reconnaissance team to Chile a month after the disaster, learned that an alert 12-year-old girl on the island had the presence of mind to call her uncle on the mainland. The girl found out that the quake was huge, ran to her village's warning bell and sounded the alarm.

"She prevented 200 deaths," Dengler says. "Here was a girl who was paying attention, who knew something about earthquakes and tsunamis, who sought more information and saved her village."



DENGLER IS AN INTERNATIONAL expert on earthquakes and tsunamis who has taught at HSU since completing her Ph.D. at UC Berkeley in 1979. She specializes in teaching the public how to prepare for a disaster, limit its impact and survive it unscathed. In her classes at Humboldt State – which sits atop the Cascadia Subduction zone where two tectonic plates meet – students get experience monitoring seismic data from around the globe and simulating disaster scenarios to improve preparedness.

Part of that preparedness means getting the word out – in advance – about how to respond when disaster strikes. In the recent Chile quake, loss of life was minimized in part because methods of survival had become part of the public consciousness after a major earthquake in 1960. Coastal residents had also regularly participated in evacuation drills – similar to those that Dengler has coordinated on California's North Coast. She has also overseen publication of the earthquake and tsunami preparedness magazine *Living on Shaky Ground* (see page 29).

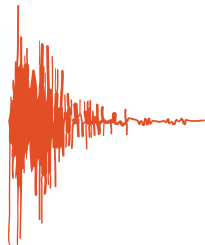
Of course, news media are a key method for educating the public, and Dengler has become a go-to expert for international media. As a high-profile media analyst, she can instruct a global public about survival, while also explaining the science to reporters on deadline.

"I consider talking with the media as important as anything else I do," she says, despite her many responsibilities as chair of HSU's Department of Geology.

Dengler was in high demand by CNN, the San Francisco Chronicle, the Boston Globe and other news organizations during the prolonged tsunami alert that followed the historic temblor off Chile in February.

She often learns of tremors well before the media call. Both her office and home computers are linked to the California Integrated Seismic Network, a notification system for emergency managers and academics. "I get an alarm any time an earthquake of magnitude 4 or larger occurs anywhere in the world," she says. "Usually I'm aware of potentially important events before the media are."

Lori Dengler is a featured tsunami expert on the NOVA web site
"Wave That Shook the World."
pbs.org/wgbh/nova/tsunami



Invaluable stories

DENGLER TRAVELED TO CHILE in March with a team of professionals to gather lessons learned, which are crucial to improving readiness for future upheavals. She is a veteran of six International Tsunami Survey Teams, which carry out post-disaster reconnaissance missions. Her professional experience spans major earthquakes and tsunamis from Papua New Guinea in 1998 to Chile in 2010.

In Chile with HSU graduate student Nicolas Graehl and several government specialists, Dengler evaluated the human and physical impacts of the fifth-largest earthquake ever recorded, at magnitude 8.8. It was also the first mega-thrust quake to savage an urbanized region with a built environment, comparable to cities in Japan, North America's Pacific Northwest and other developed regions of the seismically active Pacific basin.

In her dozen years traveling to disaster sites, the HSU geologist has developed what she calls "the deep interview technique." She says longer talks with survivors produce the most instructive lessons to help improve quake/tsunami readiness. Instead of swooping into a stricken locale for 15-minute chats, Dengler and her colleagues linger with each survivor for an hour or two.

"To get people talking you have to really, really listen, and often they don't start telling their deeper stories until 45 or 50 minutes into the interview," Dengler says. "The more you listen, the more they're willing to give, and you get these gems, these invaluable stories."

After a deadly tsunami hit American Samoa in 2009, Dengler spoke with two cousins on the island – one a schoolteacher, one a handyman – who shared vital success stories. Crucially, they and fellow villagers were experienced in evacuation drills. There was not a single death in the whole community, the cousins told Dengler.

"One of them, who had a lot of bandages around one leg, learned after the first surge that his aunty was trapped in her house. To free her, he had to go underwater and struggle to get through a wall. He seriously injured his leg while breaking his aunt free and rescuing her from the house," Dengler says. "Now, if I had stopped the interview after 15 minutes, that story wouldn't have come out."

Part of preparedness means getting the word out – in advance – about how to respond when disaster strikes.



ABOVE: Lori Dengler and students Kelly Givins and Matt Eiben take core samples at the Mad River Slough just outside Arcata. Core samples can reveal evidence of centuries of earthquake and tsunami activity. **BELOW (left to right):** This 1950s seismograph still offers valuable lessons for students. “There are newer instruments available for research,” says Dengler, “but our old Benioff does a great job of showing what earthquakes look like.” | Dengler was instrumental in establishing the Redwood Coast Tsunami Work Group on the North Coast. The group has established evacuation routes, installed sirens and posted more than 500 warning signs along the coast. | Students use the geology department’s wave tank to study how tsunamis form. The tank reveals that water moves much faster at shallow depths than in deeper water.



SEE LORI DENGLER at “Classes without Quizzes” during Homecoming & Family Weekend: humboldt.edu/homecoming



PHOTOS COURTESY OF LORI DENGLER

Searching for heroes

DENGLER'S INTERVIEW TECHNIQUE HAS another advantage: It reveals local heroes who go to extraordinary lengths to help others. When you study disasters, she says, you always discover individuals who go beyond everyday expectations at great personal risk. A nurse she met in the aftermath of Papua New Guinea in 1998 stayed on a radio all night long, immediately following the disaster. She never gave up trying to make contact and warn others.

Another factor that is crucial to readiness, or the lack of it, is pre-disaster expectations and the culture for dealing with catastrophe. Preconceived notions are terribly important because "they are often wrong," Dengler says. Chile's knowledgeable coastal population almost universally responded to the ground shaking as a warning to move fast to higher ground and escape the lethal tsunami that followed. Most of the deaths occurred at coastal campgrounds filled to capacity with inland people unaware of tsunami hazards.

In sharp contrast, just weeks before Chile's disaster, Haiti's government could barely respond to the mammoth quake that devastated Port-au-Prince and further crippled what for decades has been the poorest nation in the Western Hemisphere.

"For Haiti, it was a knockout blow," Dengler says, comparing the two earthquakes that made headlines in quick succession. "The country was set back even more by its poor infrastructure and a dreadful economy. It simply wasn't prepared. But we learned while we traveled the South American coast that building codes and awareness of earthquakes and tsunamis are an ingrained part of the Chilean culture. Many of the elderly, going back to 1960, had gone through the magnitude 9.5 quake and the big tsunami at that time. Also, Chile is an exceptionally literate society, with technical capacity, communications networks and a health care system that is better than in the United States. These are not people living in shacks. Chile's economy continued to grow despite the quake, proof of its resilience."

All the same, hundreds died in Chile and hundreds of thousands in Haiti. "I never get used to it," Dengler confesses. "It is terribly intimate, unbelievably poignant. You come across a smashed soccer ball, all kinds of debris tangled 15 or 20 feet high in the trees, you see the strewn remnants of human lives scattered on land and in the water; and shallow graves with only sand dumped on the top of them. If you got used to it, you wouldn't learn from it anymore."

As for graduate student Nicolas Graehl, a new father, his on-the-ground research in Chile was his first intimate encounter with death and destruction. "I hadn't thought about the human or societal impact until I saw people burning what was left of their belongings on the beach. I saw a house wiped off its foundations, a baby doll in the middle of nowhere, a bike stood up on its frame in the sand, abandoned. It reminded me of my own vulnerabilities, and of my 10-month-old son. I couldn't wait to get home to hug him."

ABOVE LEFT: Lori Dengler and Jeff Brandt interview a quake survivor at an elementary school in Afono, American Samoa, in 2009. Dengler says, "The more you listen, the more people are willing to give, and you get these gems, these invaluable stories." **ABOVE RIGHT:** Dengler photographs the destruction in Pellehue, Chile. The oceanside resort town was battered by a tsunami in the hours following Chile's magnitude 8.8-magnitude quake. The first waves struck minutes after the quake, and the largest wave hit the town more than an hour later.

NEXT PAGE: Grad student Nicolas Graehl took this photo of the earthquake's aftermath in Pellehue, Chile. After seeing the widespread destruction, Graehl says, "It reminded me of my own vulnerabilities, and of my 10-month-old son. I couldn't wait to get home to hug him."

The Cascadia Subduction Zone that lies beneath the northern west coast is the same type of fault that produced the magnitude 8.8 Chilean earthquake in February 2010. The last great quake that occurred on the zone happened in 1700 and was about the size of the Chile quake.



PHOTO COURTESY OF LORI DENGLE

LIVING ON SHAKY GROUND

Now in its fourth edition under Professor Lori Dengler's stewardship, the Living on Shaky Ground handbook explains how to prepare for earthquakes and tsunamis in Northern California. Its main message: Survival and recovery depend not on chance, but on being prepared.

Dengler says one of the booklet's most important functions is encouraging conversations. Talking things through prompts people to act, she notes. "When you're ready ahead of time, you are much more likely to recover quickly."

HOW TO GET READY

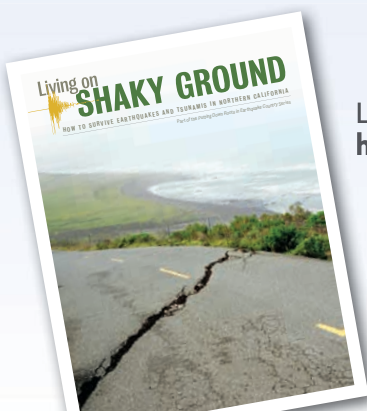
- **Identify household or workplace hazards in advance** (objects likely to topple or fall).
- **Draw up a preparedness plan and discuss it with family members** (example: a shared list of important phone numbers).
- **Organize disaster kits** (food, water, emergency backpacks).
- **Pinpoint weaknesses** (shore up brick chimneys, anchor wood stoves).

ACTIONS TO TAKE DURING AN EARTHQUAKE

- **Drop, cover and hold:** Get under a sturdy table or other piece of furniture and hold on to it until the shaking stops.

WHAT TO DO AFTER AN EARTHQUAKE

- **If near a coast, get to higher ground.**
- **Check for injuries and damage.**
- **Follow your plan.**



Learn more:
humboldt.edu/shakyground

Core Samples Reveal Ancient Quakes and Tsunamis

This core sample is from a freshwater marsh just south of Crescent City, Calif.

Recent marsh
plant material

Tsunami sand
1964 Alaskan Earthquake
Magnitude 9.2

Tsunami sand
1960 Chilean Earthquake
Magnitude 9.5

*These were big quakes, but they
were far from the North Coast, so
the sand layers are relatively small.*

Peat
(partially decomposed
plant matter)

Tsunami sand
1700 Cascadia Earthquake
Magnitude 9.0

*The great tsunami from this
North Coast quake resulted in the
thick sand deposit shown here.*

Peat

The upsides

Chile's upheaval produced many positive stories of response and recovery that will be useful in other countries. Shaking damage was minimal in most well-built structures and many Chileans cited books, television and other sources of information as key to their survival. Regular drills enabled coastal residents to remain calm and evacuate effectively.

On the other hand, a key lesson is that people don't realize how long tsunamis last, with fatal consequences. The Chilean onslaught, as well as North Coast tsunamis in 2006 and 1964, point to the need for greater public understanding that tsunami arrival times vary widely. "People are lulled into a false sense of security when an hour or two passes with no additional waves," the team said in its mission report. "Interestingly, this aspect of tsunamis is very similar to that of the sneaker waves that claim many lives on the West Coast each year."

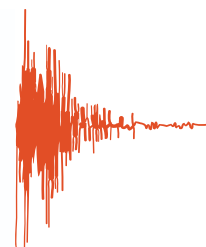
In fact, Dengler has a deep sense of mission about informing local and regional communities about preparedness. She and her students, Graehl among them, staff an exhibit at the Humboldt County Fair each year to equip residents of the earthquake-prone North Coast with simple tips, like "drop, cover and hold" if you're indoors when a quake strikes. People can also pinpoint their homes or offices on tsunami maps and find out the best routes to evacuate.



She moves through her duties with inexhaustible energy, say longtime colleagues. "I have never emailed her early enough in the morning or late enough at night that I didn't get an immediate response," says Troy Nicolini, tsunami program manager for NOAA's National Weather Service, who accompanied Dengler to Chile. "Lori has limitless reserves of inspiration for her work."

Dengler says every overseas mission renews her faith in people's common humanity. "I come back to campus with a positive sense that human societies are fundamentally good, that we really need one another. There's a spiritual lesson in this: Societies are so much more multidimensional than we tend to think. It opens your eyes to the world."


"And let me tell you something," Dengler confides with a knowing smile. "Ten-to-twelve-year-old girls tend to be particularly heroic. In tsunamis, I know of three from my field experience whose quick reactions were lifesavers." **H**

Since 1986, Dengler has directed HSU's Humboldt Earthquake Education Center, attracting more than \$340,000 in private financial support for earthquake education efforts, equipment and field research.





“You come across a smashed soccer ball, all kinds of debris tangled 15 or 20 feet high in the trees, you see the strewn remnants of human lives scattered on land and in the water. If you got used to it, you wouldn’t learn from it anymore.”



The earthquake’s aftermath in the resort town of Iloca, Chile. Most of the deaths in Chile occurred at coastal campgrounds filled to capacity with inland residents unaware of tsunami hazards.



PHOTO COURTESY OF LORI DENGLER

PRESSURE POINTS

STUDENT USES CAMERA TO HELP HAITI

Photos by Travis Turner





TWO DAYS AFTER THE Jan.12 earthquake struck Haiti, HSU journalism student Travis Turner decided to travel there to document the destruction.



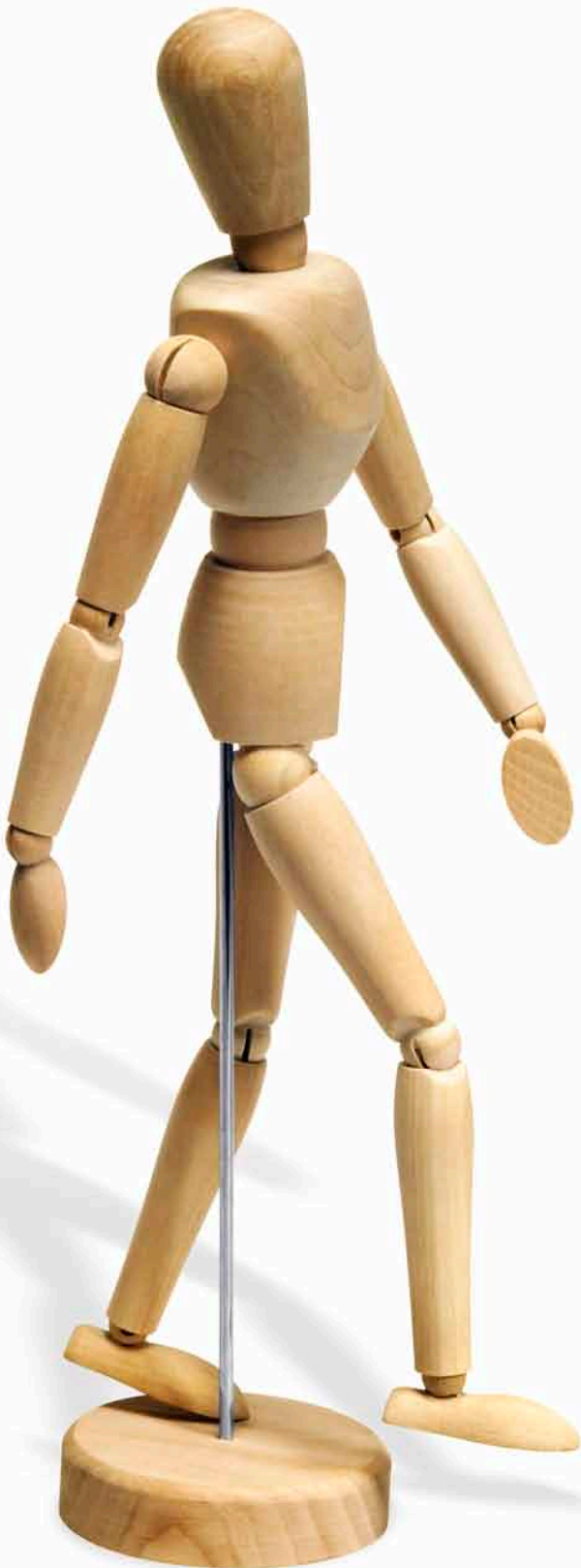
"I thought it would be a good opportunity to see first hand what was happening, rather than relying on mainstream media reports," says Turner.

Less than two weeks later, Turner was in Haiti's capital, Port-au-Prince, where the quake damage was most prevalent. "I've never seen destruction on that scale before. You can't get away from it. It's so humbling," he says. "I was out of my comfort zone. Your senses are bombarded by all the tragedy. There are things happening there you just don't see in the U.S."

His work was subsequently exhibited at Arcata's Venatore Gallery, with proceeds benefitting the Maison Fortune Orphanage in Hench, Haiti.

Another HSU student, Patrick Hawkins, a forestry major, is spending four months in Haiti this fall with his brother. They are leading groups of relief workers in the ongoing effort to help Haiti recover from its devastating Jan. 12 earthquake.





The Next BIG STEP

**Searching for ways to keep moving
as we get older** by Professor Justus Ortega



THE MOMENT BETTY CAME in to the Biomechanics Lab, I knew she was an athlete. She moved with confidence and speed, reaching easily across the steel platforms in the floor that measure a body's force. She grasped my hand, shook it firmly and said, "I'm ready to walk when you are." I was struck by the way she moved, how strong her voice was. Even though I planned to formally interview her later for my walking study, I was too curious to wait, so I jumped in and started asking questions. It turns out that between her senior group, walking the dog and hiking on weekends, she walked almost 24 miles a week. Betty was an elite athlete by any standard. And to top it all off, she was 90 years of age.

Betty came to my lab that day to help me understand the effects of aging on the energy cost of walking, a primary focus of my research. It has long been known that older adults over the age of 70 use about 30 percent more energy to walk the same distance as a young adult. But the reasons are not well understood. Possibly as a result, most older adults walk less and more slowly as they age, often leading to a complete loss of mobility. My goal is to understand if there is a link between the loss of mobility and the higher cost of walking in older adults, determine the causes, and ultimately learn whether exercises such as walking, strength training and even

Tai Chi can improve mobility among the most senior members of our society.

My work in biomechanics all started here at HSU. I was a pre-med student wandering the halls of the Science B building, unsure if I should be a biology or physics major. I loved the math in physics but was fascinated by the most incredible machine I had ever seen: the human body. Based on a suggestion from a physics instructor, I took a course in kinesiology called Biomechanics, which is essentially the physics of human movement. The professor of the course, Richard Stull, fascinated me with colorful descriptions of how the body works. I was hooked. After that class, I switched majors to Kinesiology and never looked back. Professor Stull continued to nurture my passion for biomechanics, letting me help him with projects and lab experiments. Working with Professor Stull at Humboldt State gave me the skills I needed to get into graduate school at the University of Colorado, earn my Ph.D., and ultimately return to HSU to continue the cycle of turning students on to the field of Biomechanics.

So what's the next step (pun intended)? In the Biomechanics Lab, located in the new Kinesiology & Athletics building (please come and visit), I have two teams of graduate and undergraduate students working to answer the question "Why do older adults have a greater cost of walking?" One team is looking at how muscles are activated when elderly adults walk and whether they use more muscle than is actually needed. For example, older adults might contract their hamstring when only the quadriceps is needed. This "co-contraction" of antagonist muscles has been shown to increase the cost of walking in other populations such as cerebral palsy or post-stroke patients.

The second team of students is quantifying the energy cost of generating force to support body weight. Over the last year and a half the team built a weight-support device that allows us to measure changes in energy consumption at different levels of weight support. How does it work? As weight support increases, the energy cost of walking decreases. If older adults have a greater cost of supporting body weight we should see a greater drop in energy consumption as a result of weight support.

The results of these studies should help us to develop exercise programs for improving walking efficiency and keeping older adults mobile longer in life. We know it is possible. After all, Betty who is now 93, is still walking more than 20 miles a week.

SEE JUSTUS ORTEGA at "Classes without Quizzes" during Homecoming & Family Weekend.

humboldt.edu/homecoming

Practical exercise and activity tips

► **MAKE IT A PRIORITY.** Try doing physical activity early in the morning before you get busy. Schedule it on your calendar.

► **MAKE IT EASY.** If exercise is difficult or expensive you will probably not do it. Put small weights next to the couch so you can do some lifting while watching TV, or walk around the block when you get the mail.

► **MAKE IT SOCIAL.** Enlist an "exercise buddy." Many agree that exercising with others "keeps them going." Walk during lunch with a co-worker or join a dance or yoga class with a friend.

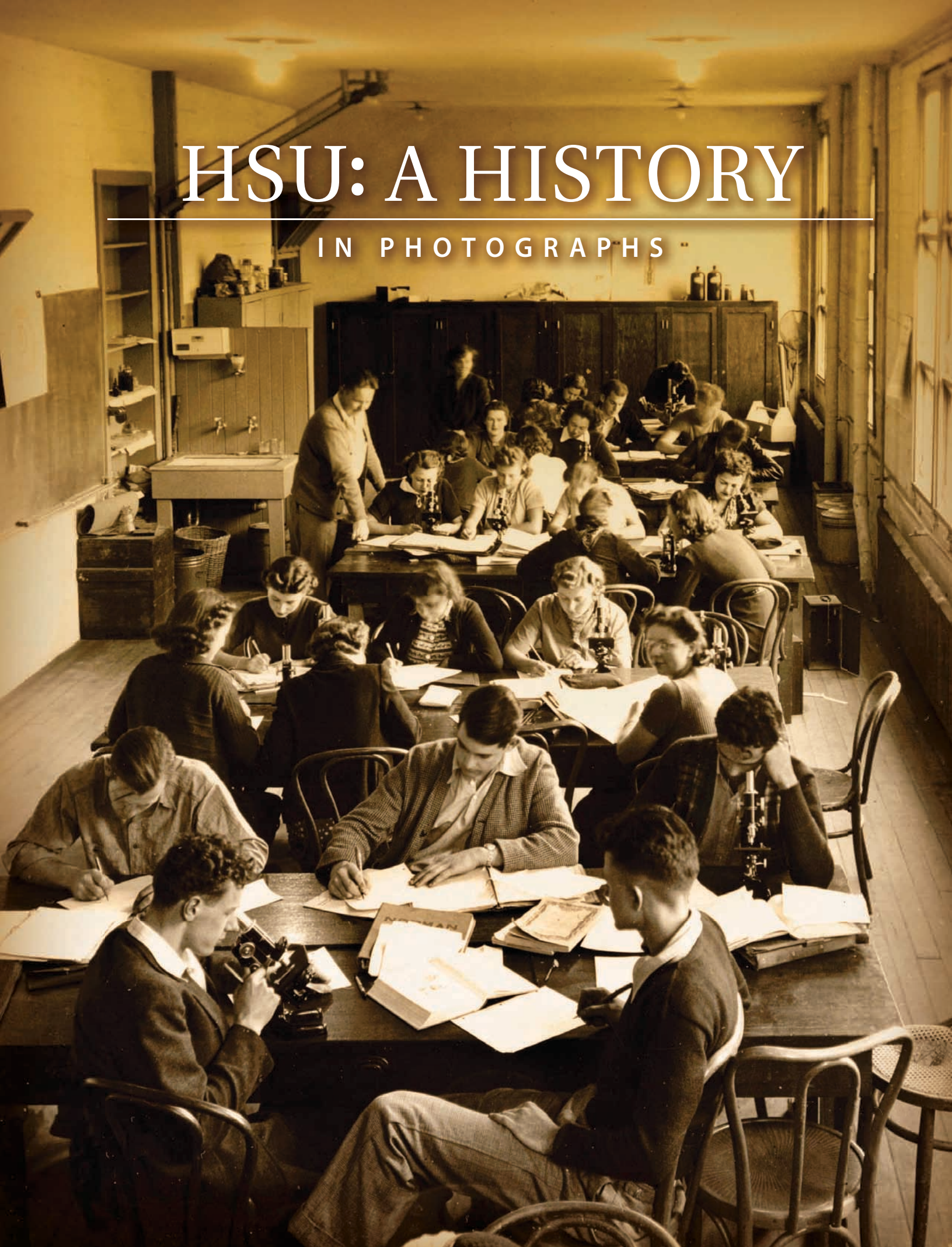
► **MAKE IT FUN.** Do things you enjoy – but pick up the pace. If you love the outdoors, hike on a favorite trail, or try biking instead of driving. Listen to music or a book while walking or gardening.

► **MAKE IT AN ACTIVE DECISION.** Seize the opportunities to be active that are all around you. When shopping, park farther away and walk briskly to the store. Better yet, try doing some of your errands on foot or bike rather than in a car.



HSU: A HISTORY

IN PHOTOGRAPHS





ARCHIVAL PHOTOS COURTESY OF THE HSU LIBRARY HUMBOLDT ROOM

A new book by alumna Katy Tahja offers a fun and quirky photographic tour through HSU's nearly 100-year history. Titled simply "Humboldt State University," it contains more than 200 archival photos. Many have never previously been published.

THE BOOK'S PHOTOS COVER subjects from old dorm rooms with woodburning stoves to blimps flying over campus. Many show the impact on campus of events like the Great Depression, World War II and the Vietnam War. There are also plenty of photos of athletics and social events throughout the years. On the cover is a chemistry class in Founders Hall in 1938.

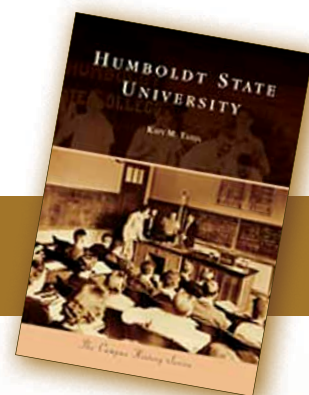
The book was published by Arcadia Publishing as part of its "Campus History Series." It is available from the HSU Alumni website at a 10% discount, with free shipping (see below).

The book's author, Katy Tahja, earned her bachelor's degree in journalism 40 years ago at Humboldt State. She eventually married David Tahja ('71), and their daughter Fern continued the family tradition by graduating from HSU in 2007.

The author teamed up with longtime friend Joan Berman of the HSU Library's Humboldt Room, which houses a large collection of campus photos, and spent last summer sorting through thousands of old and new images. She had to narrow them down to just over 200.

LEFT (Top to Bottom): In costume with ukeleles, these women were part of the touring Lyceum or Collegians group in 1927. The term "Lyceum" covered operas, chorale, glee club, orchestra and dramatic performances offered to the public. | The military men at the World War II dirigible base in Samoa, Calif., flew over the quad at Founders Hall so that female students would come out and wave at them. The noise of the motor reverberated in the quad, irritating professors and inciting every dog within blocks to howl. | The Lucky Logger, the school mascot, was based on a 9-foot statue that once stood in the men's gym. Here, he rides in a convertible in the 1962 Homecoming parade.

FACING PAGE: A botany lab in the basement of Founders Hall in 1939. Some of these now-antique microscopes may be found in the Robert Paselk Scientific Instrument Museum in the HSU Library.



Through October, buy the book at a 10% discount and receive free shipping:
<http://alumni.humboldt.edu/book>

Students Call, Alumni Respond


Over \$1 Million in Four Years

A **JENGA TOWER DOMINATES** the table in the office of HSU's dedicated student callers. Anyone who brings in a pledge gets to take a turn. But no matter who topples the tower, everyone wins, because in just four years, student callers have brought in over \$1 million.

Your gifts help fund student scholarships, instructional technology, facility upgrades, academic programs and much more. On most weeknights, the students sit down at their stations and reach out to HSU alumni and parents of current students. One of our student callers will be calling you soon to ask for a contribution to Humboldt State.

Although they are calling for donations, connecting with the person on the other end of the phone is an important part of the job. "The best part is the conversation," says caller Julia Reynolds. "I learn a lot about HSU. It's helping me stay in love with Humboldt."

I talk to musicians all the time. As soon as I mention that I'm in the orchestra, they ask me what I play, and I've had some long - and awesome - conversations about the music in Arcata, big label bands, classical music, and so on. It's great!
~ Michelle Arnett



ONE OF OUR STUDENT CALLERS may call soon to ask you to contribute to **Humboldt State University**.

Class Notes

Submit a Class Note: <http://alumni.humboldt.edu>
or email: alumni@humboldt.edu

1950s

Felix Smith, '56 Wildlife Management, was a fish and wildlife biologist with the U.S. Fish and Wildlife service for 34 years. He has been a lifelong advocate for the protection of habitat and responsible use of water resources. Smith has also written and given testimony about the preservation and restoration of fish and wildlife habitat. He serves on the board of Save the American River Association and is a member of the Environmental Water Caucus of the Sacramento Area Water Forum.

Wayne "Fish" Salmon, '58 Fisheries, is a retired Navy Captain and secondary school biological science teacher. The name "Fish" was pinned on him when he first entered flight training with the U.S. Navy. He and his wife Beth live in Indianapolis, Ind. He encourages his old buddies, especially those who would like to go salmon and halibut fishing in Alaska, to contact him at CaptSalmon@aol.com.



1970s

Michael Brattland, '70 History, is President of the Theta Epsilon Alumni Association (TEAA) of Tau Kappa Epsilon Fraternity at Humboldt State University. You can contact him at mbrattland@gerlecreek.com.

Kathleen (Alban) Tahja, '70 Journalism, authored the new book "Humboldt State University" in the Campus History series of Arcadia Publishing. It includes 200 photos covering 96 years of Humboldt history. Many photos of students had no captions; if you can identify students in the book, contact her at ktahja@mcn.org. She married an HSU grad, David ('71), and her daughter, Fern ('07), is also an HSU grad.



Chester A. Mathis, '72 Chemistry, professor of radiology, pharmacology and pharmaceutical sciences at the University of Pittsburgh, received the prestigious Paul C. Aebersold Award, which recognizes outstanding achievement in basic science applied to nuclear medicine. He earned his Ph.D. in chemistry from the University of California, Davis in 1979. Mathis primarily conducts research on developing positron emission tomography radiotracers to visualize biological processes that take place in the body, especially how the brain functions.

Lila Marz Harper, '76 English, edited a new edition of Edwin Abbott's 1884 mathematical fantasy, "Flatland", published by Broadview Press. She is the thesis editor and a senior lecturer at Central Washington University in Ellensburg, Wash., teaching in the English, Computer Science, and Douglas Honors programs. She received her Ph.D. from the University of Oregon in 1996.

Michael Margolies, '76 Physical Education, has restarted his business, Sport Psychology Consultants, after a hiatus. His website is TheMental-Game.com. He can be found on Facebook and LinkedIn and would love to hear from anyone that attended HSU during 1974-1976, especially PE majors and soccer players.



Byron Craighead He's Got Gold

BYRON CRAIGHEAD SEES RETIREMENT as his golden years – Olympic gold, that is.

After 37 years teaching and training athletes at Santa Rosa Junior College, Craighead ('70, MA '71) retired in 2007. His next step was helping the U.S. men's bobsled team take gold at the 2010 winter Olympics.


Craighead still recalls the rush of emotions and energy when the men's team finished the last run and took the top slot. And he was just as proud of the women's team when it took bronze. "Dreams do come true," he says.

Although he wasn't on the sled during the games, he was part of the team as a certified athletic trainer for the men and women's bobsled teams. "They're so highly tuned it's like working with Ferraris," Craighead says. "There's a lot of hands-on work that has to be done."

This wasn't the first time the Olympics came calling. Craighead participated in the winter Olympics in 2002 as a sports medicine representative to the bobsled team, and came close to going to the Olympics as a certified trainer in the early '70s before his appointment fell through. Since then, he has participated in international sporting events including the Europa and World Cups – so he's no stranger to the world of elite athletic games.

And he hasn't forgotten where it began. "Humboldt was the roots for me," he says. "It was a small college. It was personal. For all that, it was invaluable."

Craighead, who played football at HSU, initially pursued a degree in forestry. It was coach Cedric Kinzer who introduced him to his future career. "I'd never heard of tape before I met him," Craighead says. "Ced asked me if I'd like to help him in the training room and as soon as I got started I said, 'Wow! This is what I want to do!'"

A full-page background image showing a diver in the lower left, filming a large pod of sperm whales swimming in clear blue water. The whales are massive, with their heads and backs visible above the water line. The scene is captured from an underwater perspective, looking up towards the surface.

Rick Rosenthal filming a pod of sperm whales near the Azore Islands in Portugal. The shot will air as part of a new National Geographic television miniseries set for release in October.

PHOTO COURTESY OF RICK ROSENTHAL

Rick Rosenthal Bringing the Big Blue to the Big Screen

HE SWIMS WITH WHALES. He dives to discover sailfish nurseries. He snorkels with man-eating catfish. And he gets paid to do it.

Rosenthal ('67), a celebrated underwater cinematographer, has always had a connection to "the big blue." He was even Humboldt State's first diving officer, in charge of early diving operations on campus.

As a graduate student and marine biologist, Rosenthal published over 45 scientific research works. But it was difficult to get others to share his passion for marine life.

"Nobody was reading our research papers, so I decided to use film," Rosenthal says. Now millions of people can explore the wonders of the deep through his cinematography.

Early in his film career, the British Broadcasting Corporation took Rosenthal under its wing and helped him develop as a cinematographer. "They gave me a few little assignments, and the rest is history," he says.

Since then, Rosenthal has gone on to film numerous television episodes and movies for the BBC. His projects include "Life," "Earth," "Deep Blue," "Superfish" and "The Natural World."

In 2002, Rosenthal won a primetime Emmy for his work on the BBC/Discovery Channel series "The Blue Planet."

But the perks of his profession also come with problems. Each shot can take a tremendous amount of behind-the-scenes effort, and the underwater environment can be punishing. "You've got to be in great shape," he says. Generally, Rosenthal does not use scuba tanks because their bubbles scare the wildlife. Instead he free-dives with nothing but a snorkel and a heavy – and expensive – camera.

Although his work generally focuses on whales, Rosenthal is currently working on a project called "Hot Tuna." The piece explores the science, behavior and natural history of this commonly known, but increasingly uncommon, fish.

"There are not a lot of them around anymore. They've been fished so hard," Rosenthal says. "It's really special to record them on film and tape and better appreciate them. That way, the younger generation can see them and decide they want to do something about them."

Despite his long career in the water, Rosenthal still gets an adrenaline rush every time he goes to work. "We never know what we're going to see – and that's the great part."

Jen Cordaro Breaking the Chains of Human Trafficking

JEN CORDARO ('06) HAS traveled around the world to champion human rights in countries where human trafficking and child prostitution run rampant.

At HSU, a geography class with Stephen Cunha opened her eyes to the possibilities for adventure around the globe. After a study abroad trip to Tibet in 2005, she backpacked in Thailand for three weeks. While there, she noticed older Caucasian men walking with Southeast Asian girls, some as young as 10.

"The idea of such rampant abuse was painful to realize," she says, "I knew I had to do something to help."

She went on to earn a master's degree in International Human Rights Advocacy and Non-profit Management at the University of New Hampshire in 2007. Now, she works as Community Organizer of Burmese Refugees in San Diego with the Alliance for African Assistance. Her work has taken her to Myanmar, Thailand, India and a host of other countries.

Her favorite part of the job is working with the people of Myanmar. "I enjoy organizing the community with the goal of its self-sufficiency," she says. "They are people without a country, displaced refugees from their own land."

The people she serves represent 135 different tribal identities, with almost as many languages, so communication is difficult. It can

also be hard to know if she's having an impact. "The hardest part is that I'm only one person," she says. "I just have to keep believing that my work makes a difference."

And yet, Cordaro aspires to do more. She plans to pursue a degree in International Human Rights Law – not to become a lawyer, but to help people in Southeast Asia get out of the sex trade and find a haven from human trafficking.

"I've always had a love for Thailand, because of its rich culture and sheer beauty. It's also a hub for human trafficking and the sex trade. That's where I really hope to make a difference some day."



PHOTO COURTESY OF JEN CORDARO

Calling for Support

On one call, the alumnus and I were talking about travel and realized we both went to China. We progressed to having our conversation in Chinese!

~ Samantha Langs

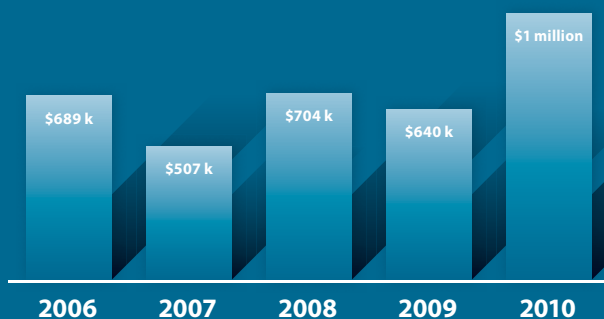
ONE OF OUR STUDENT CALLERS may call soon to ask you to contribute to HSU.



Alumni Giving More than Ever Before

Last year, alumni gave more than \$1 million to HSU – the most in our history. Because of you, HSU is able to continue providing a high-quality education at an affordable price. Over 3,900 alumni gave last year, helping us continue to give students the personal attention and hands-on experience that they've come to expect at HSU.

Thank you! We couldn't do it without you.



www.humboldt.edu/giving



Christopher Broderick, '77 Journalism, was recently named Assistant Vice President for Communications and Marketing at Portland State University. Before that, Broderick was the politics and education editor at The Oregonian, the state's largest newspaper. He holds a master's degree in legal studies from Yale Law School. Broderick and his wife, Mary Gay, live in Portland, Ore., with their three daughters.

Robin Venuti, '79 Art, is the Executive Director of the Monterey Peninsula College Foundation. She received her master's degree in Museum Studies from John F. Kennedy University in 1985. She worked in the Development office at the San Francisco Museum of Modern Art while doing her coursework and moved to the Monterey Peninsula in 1982 to work at Friends of Photography.



1980s

James Ybarra, '80 Forestry, lost his wife, Laurie Ann Davis-Ybarra, '82 Art, to leukemia in December 2009. She is survived by James and their two sons Colin and Christian. In 1979, while she was on a date with someone else at the Oregon Mime show, James introduced himself. He must not have made an impression because years later when asked how they met, he said, "The Oregon Mime." She thought about it and finally said, "Oh, yeah."

Maureen McGarry, '80, Art, '82 Teaching Credential, '90 M.A. Art, recently designed an historical landscape of the Jacoby Creek Watershed to be painted on the barn at Kokte Ranch in Arcata. In 2000, she began Arts in the Afternoon, a free after-school art studio for teens. As a painter using watercolor, McGarry is currently exploring landscapes using a panoramic format. Her projects can be seen at maureenmcgarry.com.

Veronica Lassen, '81 Wildlife Management, died on March 7, 2010. She had recently been diagnosed with Stage Four Breast Cancer and died from complications following surgery. She is survived by her husband, Roger Lynn, and two daughters, Zoe Lassen-Purser and Maia Lassen-Purser.

Scott Hammond, '82 Recreation Administration/Liberal Arts, recently published a book, "Every Day Dad: The Guide to Becoming a Better Father." Hammond, a professional speaker, consultant and leadership coach, has worked in advertising sales for radio, newspapers and cable television for more than 25 years. He lives in McKinleyville, Calif., with his wife of 29 years, Joni, and seven of their nine kids.

Beverly (Freeman) Weber, '85 Journalism, is an Academic Counselor at University of Phoenix. She is married to **Mark Weber '90 Music Education**, and they have two children, Rachel, 18, and Robert, 12. They live in Youngtown, Ariz. She says, "My two master's degrees are finished, and now it's time to read and write for FUN!"

Patrick Stupek, '85 Journalism, has worked at Oregon's largest utility, Portland General Electric, for 14 years. The skills he developed at HSU have helped him respond to a host of challenging issues the company has faced during that time, including climate change, new renewable energy resources, growing demand for electric vehicles, public utility elections, the Enron bankruptcy (PGE was formerly owned by Enron), company independence, Y2K and more.

Dean Levonian, '85 Fisheries, married Lisa Wandzell in May. He is a fire captain at Cal Fire in Truckee. The two co-own Elevation Hoops, a hula-hoop party and retail hoop business in Truckee. They plan a seven-day cruise on the Mexican Riviera in January 2011 for their honeymoon.

Don Neubacher

Taking the Reins at Yosemite

DON NEUBACHER KNEW FROM a young age that he would work at Yosemite National Park. As a child, his family frequently traveled from the Bay Area to vacation there, and he loved the waterfalls, the trees, the wilderness. He knew he was destined to be a part of it – and he was right.

Earlier this year, Neubacher landed the coveted superintendent position at the park. “I’ve always had a connection with Yosemite,” he says. “It was a dream of mine to work here.”

Neubacher earned his master’s degree in natural resources management from HSU in 1983. He began his career with the National Park Service while still a student, working in the park service during the summer through the Student Cooperative Education Program. When he graduated he had a position with NPS waiting for him. “It’s an excellent program,” he says. “Students should look into it. It was great for me.”

His resume includes stints in Glacier Bay National Park in Alaska, Denver Service Center in Colorado, and most recently, Point Reyes National Seashore in the San Francisco Bay area. Neubacher credits his Yosemite co-workers with helping to ensure that the park remains unspoiled for future generations – and that people continue to gravitate to the park. “I’m humbled and inspired to be part of such a great team,” he says. “What we do really matters.”

Over the years, Neubacher has visited the Bhutan park service and works with international parks in China and Chile to focus attention on issues such as climate change and land management. “The world is getting smaller,” he says. “People realize the world is interconnected and climate change has a lot to do with that.”

In his new position, Neubacher has already rubbed elbows with former President Jimmy Carter and hosted international students from Kenya and Bhutan. “This park brings a lot of international people together,” he says. “It is as close to paradise as you can get.”

PHOTO COURTESY OF DON NEUBACHER

Calling for Support



I called an alumna who, after a successful career, retired and opened a nonprofit sanctuary/retirement home for retired racing horses. It reminded me that Humboldt alumni and students care for more than just a paycheck or degree.

~ Julia Reynolds

ONE OF OUR STUDENT CALLERS may call soon to ask you to contribute to HSU.

Enjoy a Stable Income and Help HSU

In these uncertain economic times, a stable source of retirement income is more valuable than ever. A charitable gift annuity could allow you to contribute to Humboldt State – and secure a reliable income.

The process is easy: you make a charitable contribution to HSU and a simple agreement guarantees you a fixed, lifetime income. The income payments are partially tax-free, and you can take a charitable deduction on your tax return. At the end of the annuity, the remaining assets will go to support the next generation of Humboldt State students.

For more information, or for a no-obligation gift annuity illustration tailored to your needs, contact:

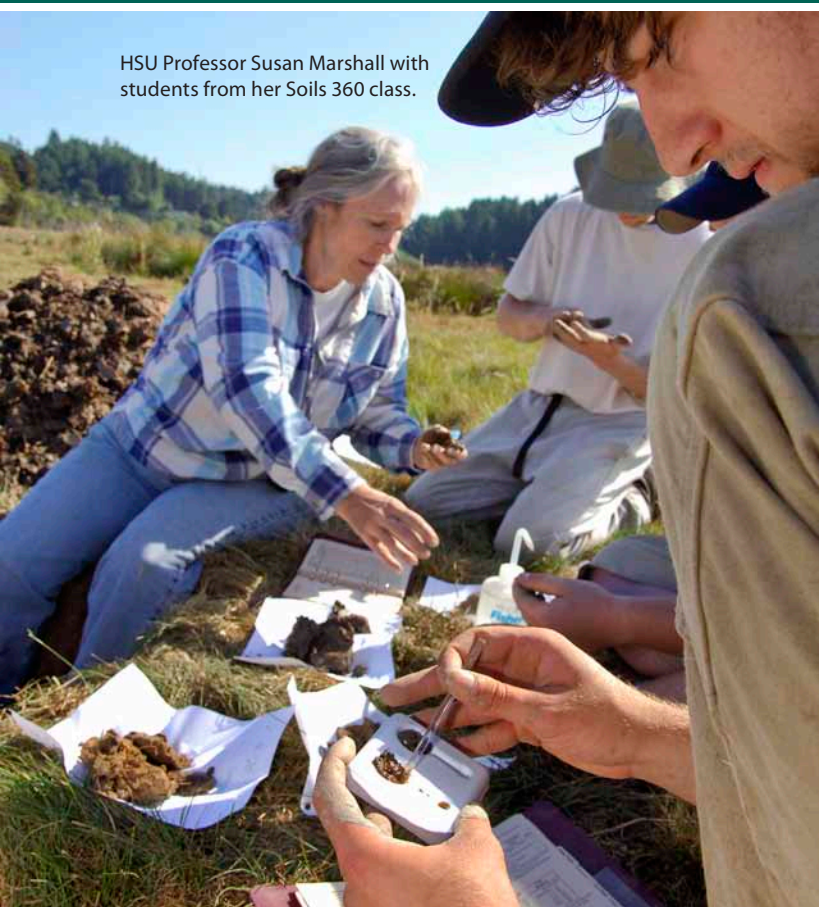
Kimberley Pittman-Schulz,
Director of Planned Giving
 (707) 826-5147
giftplanning@humboldt.edu
www.humboldt.edu/giftplanning

Sample Results: Benefits of a \$10,000 Single-Life Gift Annuity*

Age	Payout Rate	Annual Income Payment	Tax-Free Income Amount	Charitable Deduction	**Effective Rate of Return
60	5.2%	\$520	\$312	\$2,471	6.7%
70	5.8%	\$580	\$390	\$3,802	7.9%
80	7.2%	\$720	\$531	\$5,006	10.3%
90	9.5%	\$950	\$771	\$6,219	14.3%

Note: This information is not provided as legal advice. Seek counsel from your attorney and financial advisor.

HSU Professor Susan Marshall with students from her Soils 360 class.



Darryl Ramos-Young, '86 Natural Resources Planning and Interpretation,

is the Education Coordinator for West Basin Municipal Water District, which provides water to the coastal cities of Los Angeles County. He manages the agency's education programs and is designing a new, 7,000-square-foot water education center highlighting the efforts of West Basin's environmentally responsible ocean-water desalination research plant. He has led education efforts for the National Wildlife Federation, East Bay Regional Park District, National Audubon Society, and Save the Redwoods League.



Susan Slocum, '89, Liberal Studies/Recreation Administration, recently received a Ph.D. in Parks and Recreation and Tourism Management from Clemson University in South Carolina. Slocum spent a year researching the lifestyle of people in villages in Tanzania, Africa, for her doctoral dissertation, "Economic Development and Poverty Reduction." For her research, which was done through the University of Tanzania in Dar Es Saalam, she lived in several villages in the same conditions as the residents.

1990s

Don Rowan, '92 Fisheries Biology, went on to earn graduate degrees in wildlife biology and experimental statistics at New Mexico State University. Don lives in Merced County, Calif., where he teaches high school biology, AP biology and serves as Science Department Chair. He is married with two kids, Lyndsey, 6, and Bennett, 2. Before leaping into public education in 2000, Don worked as a fisheries biologist/aquatic ecologist for various state, private, and federal agencies.

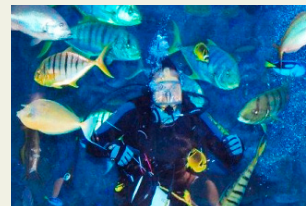
Lisa Holloway Klyce, '93, Family Studies and Adam Klyce, '95, Business Administration,

will celebrate their 15th wedding anniversary this December. They live in Berkeley, Calif., with their two children and dog. Lisa uses her Child Development degree every day as a mom and occasionally as a substitute preschool teacher. Adam is vice president of marketing for a small medical device company.



Luke Williams, '93, Special Major,

is a divemaster for the Guest Immersion Program at the Aquarium of the Pacific in Long Beach, Calif. The program allows scuba-certified aquarium visitors to dive inside a 350,000-gallon tropical exhibit surrounded by 2,000 creatures representing 200 species. Luke received his advanced, rescue, assistant instructor and divemaster scuba certifications from Humboldt State.



Ron Davis, '95 MA Biology, earned a Ph.D. in Performance Studies from UC Davis in June 2009. His dissertation was on Ecological Aesthetics.

Bryan Jacobs, '97 Journalism, is a Marketing Communications Manager at CGTech, a software development company in Irvine, Calif.

Krista Detor Singer/songwriter Takes International Stage

THE WORD "MUDSHOW" MIGHT make you think of carnival acts with jugglers and ringmasters. But for Krista Detor ('91), it's the name of an album that *Rolling Stone* magazine calls "a small miracle."

Detor, a critically acclaimed indie-folk singer, has come a long way from her classical training background. She's currently on the road touring for her fourth album, "Chocolate Paper Suites," which has received rave reviews in the U.K. She describes the album as an eclectic romp through a musical landscape that incorporates Americana, folk, rock and '40s standards. It debuted in the United States in September.

As a music major at HSU, Detor studied under the late Deborah Clasquin, a piano professor who made a lasting impact. "She was a world-class performer and incredibly passionate," Detor says. "She opened my eyes to the world of phrasing and nuance. She beat me up a bit, especially when she didn't think I was giving it my best. I couldn't have asked for a better teacher."

Detor gained national exposure when friend and folk artist Carrie Newcomer invited her to join a 2005 U.S. tour. Soon, she established a following. "It was a brand new world, and I was very fortunate," Detor says. "I got to avoid the grunt work and went straight into the circuit."

Writing, performing and touring are not her only duties as a musician. She also acts as her own label, negotiating air time, making travel arrangements and stocking her own merchandise. She doesn't mind it a bit. She has been featured on NPR, the BBC and PBS, shared stages with such luminaries as Aaron Neville and Jakob Dylan, and her music has been featured on film and television soundtracks. "I wouldn't do it if I didn't love it," she says.

Detor, who grew up in Torrance, Calif., believes in following her dreams. Her father encouraged her to do what she loved, saying the money would follow. "Some people don't want that kind of pressure, worrying about where the money comes in and they settle for what's safe and easy," she says. "You really have to follow your heart."

Photo courtesy of Krista Detor

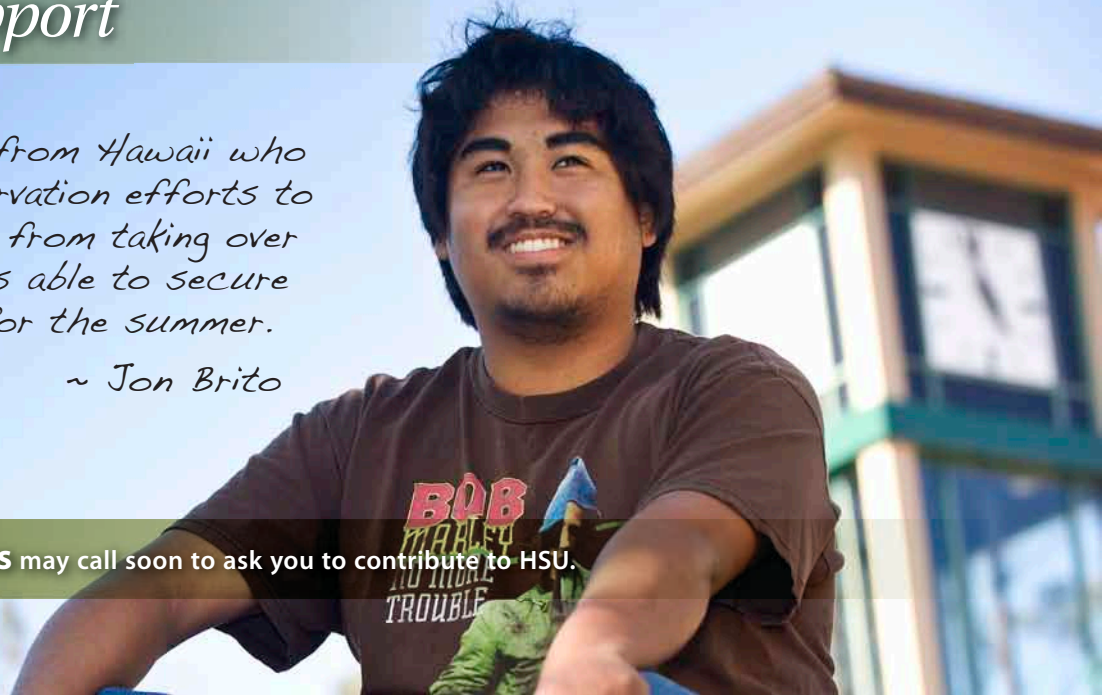


Calling for Support

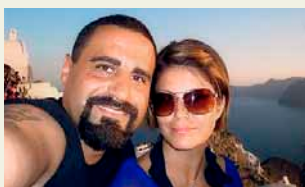
I talked to a woman from Hawaii who was involved in conservation efforts to stop invasive seaweed from taking over Hawaiian reefs. I was able to secure a volunteer position for the summer.

~ Jon Brito

ONE OF OUR STUDENT CALLERS may call soon to ask you to contribute to HSU.



Bogdan Apostolache, '98 Business Administration, got married in 1999 and had twin girls in 2001. He works in the aerospace sector helping build jets for the U.S. military. He says, "What's up class of 1998? Hope everyone is doing good."



Greg Hoetker, '98 English, teaches at South Junior High School in Boise, Idaho. In 2006 he received an M.A. in Humanities, with a concentration in American Literature, from CSU Dominguez Hills. In 2010 he received an Ed.D in Education, Curriculum and Instruction, with a concentration in Literacy, from Boise State University. He lives in Boise with his wife, Heather, and their two children, Luke and Mia.

2000s

Michelle Yeung, '01 Computer Information Systems, earned an Ed.D. from the University of Southern California. She works as an Instructional Technology Analyst in Los Angeles.

Michael Bronfman, '01 Journalism, works as a stagehand for the International Alliance of Theatrical Stage Employees Local 22. He previously was a taxi driver and teacher.

Jinnah Benn, '01, Biology, spent eight years working with vernal pool systems. She now works for the Army Corps of Engineers in the Regulatory Division and is dedicated to honoring the Corps goal of "no net loss" of wetlands. She lives in the Sacramento area.

Matthew August McClelland, '01 Speech Communications, married Heather Neumann in April. They both manage retail stores in San Jose. For their honeymoon, they traveled to Yosemite, where they first met.

Laura (Tankersley) Landoll, '03 Journalism, eloped in November. She has a dog, Porter, and works as an Account Supervisor with Ogilvy Public Relations Worldwide in Denver, Colo.

Matt Kapko, '04 Journalism, joined the RCR Wireless News editorial team as feature editor. Kapko will head up RCR Wireless News' rapidly expanding special-report coverage and provide regular news coverage

to RCR Wireless News and its affiliates. Kapko has spent the last six years as a journalist and editor covering the wireless industry, digital media and marketing. He lives in Long Beach, Calif.

Serena Selezny, '04 Journalism, after working for HSU Public Affairs, Island Magazine and McClatchy newspapers, is now a marketing coordinator at Tucci Creative in Tucson, Ariz.

Christina Castaneda, '05, Political Science and **Steven Hull, '05, Mathematics**, were married in June in Oakland, Calif., on the ninth anniversary of meeting at HOP. While in college, they both worked for HOP and their romance blossomed.

Sarah Lewers, '05 Journalism, graduated with a law degree from Empire College in June. She lives in Healdsburg, Calif. She says, "Thanks to the JMC department at HSU for the wonderful instruction!"

Robert Deane, '07 Journalism, lives in Echo, Okla., and is the community reporter and photographer for the Hermiston Herald. In his free time he reads, takes pictures and goes for drives with his two dogs.

Stephen Kilroy, '09 History, has been named co-coach of the boys' and girls' cross country teams at Oak Park High School in Ventura County, Calif. He had a high finish of 22nd at the NCAA Division II West Region Cross Country Championships in 2008.

Jennifer Gummerman, '09 Biology and Zoology, volunteers at wildlife

rehabilitation centers in Southern California, including the International Bird Rescue Research Center (IBRRC) in San Pedro, one of the centers involved in the Deepwater Horizon oil spill response. She also serves at the Wetlands and Wildlife Care Center in Huntington Beach and the Pacific Marine Mammal Center in Laguna Beach. A paraprofessional, she has trained to capture/recover oiled wildlife in the field and is a member of the National Wildlife Rehabilitation Association and related groups.



Zachery Michael Smith, '10 Kinesiology, married Casie Lynn Morrison in August. He is an EMT1 with City Ambulance in Eureka and with Cal/Ore Life Flight.

HUMBOLDT STATE UNIVERSITY

HOMEcoming & FAMILY weekend

OCTOBER 15th - 17th, 2010

LOOKING FOR AN EXCUSE TO COME BACK TO CAMPUS?

Golden Graduate Reunion • Pre-game BBQ and Tailgate Party
Arts Showcase • Classes Without Quizzes • Campus Tours
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Football game versus the Dixie State Red Storm

And much more!

humboldt.edu/homecoming

157%
more
fun!



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Calendar

Steve Martin & The Steep Canyon Rangers

Oct. 1 • 8 pm
Van Duzer Theatre
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Women's Soccer Home Games

Oct. 1 • 4:30pm
vs. San Fran. State
Oct. 3 • 11:30am
vs. Cal State Mont. Bay
Oct. 8 • 7 pm
vs. Cal State Stanislaus
Oct. 10 • 2 pm
vs. Chico State
Oct. 22 • 4:30 pm
vs. Sonoma State
For tickets:
(707) 826-5959



Football Home Games And Tailgates

Oct. 2 • 6 pm
vs. Central Washington
Oct. 16 • 6 pm
vs. Dixie State
Nov. 6 • 1 pm
vs. Western Oregon
Nov. 13 • 1 pm
vs. Simon Fraser
For tickets: (707) 826-5959

Homecoming & Family Weekend

Oct. 15 - 17
humboldt.edu/homecoming

M. Butterfly

October 14-24
Van Duzer Theatre
(707) 826-3566



Fall Preview For Prospective Students

Oct. 15
(866) 850-9556



KHSU 50th Anniversary Party/Closing Ceremony

Oct. 23
Mazzotti's in Arcata

Ira Glass

Nov. 6 • 8 pm
Van Duzer Theatre
(707) 826-3928



Clint Black
Dec. 15 • 8 pm
Van Duzer Theatre
(707) 826-3928



B.B. King

Nov. 1 • 8 pm
Van Duzer Theatre
(707) 826-3928





THINGS



[getting around]

Whether it's on a skate board, a tricked-out mountain bike or in good old walking shoes, there are plenty of ways to get around campus.



meet humboldt

VITEK JIRINEC ('10) GREW up in Prague, Czech Republic. In his early teens, he moved with his family to Southern California. A Wildlife Biology major, he is the recipient of the Lorene J. Harris Scholarship for promising undergraduates in wildlife, set up by professor emeritus of Wildlife Stanley W. Harris and his wife, Lorene.

AVOIDING GRIZZLY BEARS "I just spent my second summer in northern Alaska working for the Wildlife Conservation Society. Our crew was dropped off by bush plane and we camped out on the tundra for two months, gathering data on nesting birds, banding them, collecting blood samples for avian influenza tests, and avoiding grizzly bears."

LOTS OF TRAVEL "Following my Costa Rica internship for the Redwood Sciences Lab, I flew to Jamaica to help perform research on migratory birds in coffee farms. For five weeks, I captured birds and tracked radio-tagged individuals via telemetry in and out of coffee farms."

SCHOLARSHIP = MORE TIME "Receiving the scholarship money eliminated my need to get a part-time job, which would divert my time from finishing my honors thesis project."

WATCHED BY SPIDER MONKEYS "In Belize [with HSU's Sierra Institute], I remember jumping into a clear, fast stream and emerging downstream from a limestone cave where bioluminescent bacteria covered the ceiling above broken pieces of Mayan pottery. Flying through the river, I caught glimpses of spider monkeys curiously watching me from the canopy above."

THANKS MATT "I had a number of great professors at HSU, but Matt Johnson went out of his way to open many doors for me that may be critical in my search of a graduate program."

meet more humboldt students
humboldt.edu/meet

Jirinec demonstrates bird banding
for an HSU Wildlife Techniques class
at the Lanphere Dunes station of the
Humboldt Bay Bird Observatory.





HUMBOLDT STATE UNIVERSITY

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LEVERAGE YOUR HUMBOLDT

Free Career Services for Alumni

Looking to land that first job, or take your career to the next level? Humboldt Alumni can help. Our new Career Network features leading online career services, free to HSU graduates.

- Get resume help
- Find a mentor
- Assess your strengths
- Do a mock interview using a webcam

... and there's much more.

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