

# Humboldt

The Magazine of Humboldt State University | Fall 2015



## Fitter for Duty

Creating Better  
(and Lifesaving)  
Workouts for  
Firefighters and Cops

HSU and Blue Lake  
Rancheria put  
Smart Energy  
to the Test

On the Hunt  
for Elusive White-  
Footed Voles

**PLUS!** 8 Things,  
Upcoming Campus  
Events, and More



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**ON THE COVER:** Arcata Fire District's new recruit,  
Matt Cendejas ('17 Recreation Administration), emerges from  
a burning home in McKinleyville during a fire training exercise.

**THESE PAGES:** Luffenholtz beach, a few miles from campus,  
on a typical summer day in Humboldt: foggy, cool, and beautiful.



# from the President



WITH THE RETURN OF STUDENTS for the new academic year, the energy level on campus is high. Skateboards, bicycles, and pedestrians fill the sidewalks, and music usually fills the Quad at noon. Fall is an exciting time to be at Humboldt State.

Energy is an important theme at Humboldt, and you'll read about many different forms of energy in this issue of the magazine – conserving, focusing, and managing energy.

The collaboration between Humboldt State's Schatz Energy Research Center and the Blue Lake Rancheria is a great example of HSU's focus on renewable energy. Students and faculty are working together to develop a microgrid that is entirely powered by renewable sources. Not only will this project support an emergency Red Cross center entirely off the grid, if necessary, but the efforts will also improve the efficiency of solar panels and battery storage. You can learn more about the microgrid project in this issue.

A different approach to solar energy is part of the story about HSU's L.W. Schatz Demonstration Tree Farm, and the ways in which photosynthesis converts solar energy into chemical energy. HSU is preparing a new generation of professionals in forestry and wildland resources, with a focus on transferring energy through natural and human systems. In addition, this magazine includes stories about human energy and fitness, including exercise programs for children with disabilities and for first responders.

The theme of energy pervades both this magazine and Humboldt State University. Education is powered by intellectual curiosity, by innovation, and by connecting ideas. Thank you for your continued interest and engagement in the exciting energy here at HSU!

Hope to see you around campus soon,

*Lisa A. Rossbacher*

Lisa A. Rossbacher, Ph.D.  
President

**Instagram:** @hsupres

**Blog:** [humboldt.edu/president/blog](http://humboldt.edu/president/blog)

## Humboldt

The Magazine of Humboldt State University

[humboldt.edu/magazine](http://humboldt.edu/magazine)

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# Join us for... HOMECOMING & FAMILY weekend

OCTOBER 8-11, 2015

**Thursday, October 8**  
Clubs Fair

**Saturday, October 10**  
HSU Lumberjacks vs. Azusa Pacific

**Friday, October 9**  
Homecoming Parade  
Pep Rally

**Sunday, October 11**  
Concert: Big Gigantic  
and Special Guest

Homecoming & Family Weekend is the perfect time for a Humboldt trip, so mark your calendar for October 8-11!

Registration and schedule at  
[humboldt.edu/homecoming](http://humboldt.edu/homecoming)



**LETTERS ARE WELCOME** and may be published in upcoming issues of *Humboldt* magazine. Letters may be edited for length and clarity. Send to [magazine@humboldt.edu](mailto:magazine@humboldt.edu) or the address listed below.

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# Grad Student Takes on College Hunger

WHILE THE OLD CLICHÉ of “starving student” has often been used to indicate tough times in college, “food insecure” is the more appropriate term, according to Social Work graduate student Heather King.

King points to a recent study by the HSU Department of Social Work that uncovered some disturbing trends. For example, 40 percent of students interviewed were cutting the size of meals or skipping them entirely because they didn’t have enough money for food. “I get major headaches when I don’t eat. It makes it very hard to concentrate on schoolwork,” said one of the students surveyed. “It’s hard to do homework when, after a long day, I get home and have no energy.”

King, herself, knows those problems all too well. She arrived in Humboldt County in 2007, “pregnant and in poverty,” she says. Baby on hip, she completed her undergraduate requirements in 2008, but her difficulties continued.

After entering the Social Work graduate program in 2013, King sought ways to help others who shared her plight. She was hired by the Oh SNAP! campus food program as a student engagement assistant helping students apply for CalFresh, the California state program of the national Supplemental Nutrition Assistance Program (SNAP). A subsequent internship inspired her master’s thesis.

“I intended my master’s thesis to focus on eligibility barriers college students face in accessing CalFresh, but I learned that the primary barriers are all at the federal level,” she said.

“If we can broaden this evaluation on eligibility barriers, we can begin to build the foundation for tackling this on the national level,”



Social Work graduate student Heather King stocks the campus food cupboard, a project she helped initiate.

she says. “SNAP has enormous potential to help college students meet basic needs and fight malnourishment and stay on track.”

Efforts to address the challenge at HSU are continuing with outreach and establishment of an on-campus food cupboard. Alumni and other donors have given more than \$42,000 to support the work.

► To learn more or to give, visit [hsuohsnap.org](https://hsuohsnap.org)

# Student Experience Inspires Library Gift



TO MANY, THE HSU LIBRARY is a place to study and to collaborate. For Malcolm Buchanan (’50 English), it shaped his life.

Buchanan, who worked at the Library while a student at Humboldt State College, recently left the Library a \$200,000 bequest. He passed away in December 2014 at the age of 88.

“Our college experience often guides our whole life, and this was certainly the case for Malcolm,” says longtime friend Ken Fish. “He would be so happy this money was going to HSU. It was always his wish.”

After graduating from Humboldt State, Buchanan became a high school English teacher and later a librarian for the Newport Mesa Unified School District in Costa Mesa, Calif. Buchanan’s passion was

helping students, so after retiring he took a position as a librarian at UC Irvine assisting students in the library with research.

His bequest will help update the Helen Everett Reading Room and third floor student study spaces to support collaborative learning, digital scholarship, and showcases for student research.

HSU students will also receive unique hands-on learning experiences under the Library’s Special Collections and Scholarly Communications programs. They will work with rare and unique collections, and curate digital exhibits that highlight research projects and regional history. They will also have a chance to design, lay out, and edit materials for the Humboldt State University Press, which launches this fall.

“His gift recognizes the importance of a library in academic experiences and shaping the future of students,” says Cyril Oberlander, dean of the University Library.

# Student Success Effort Nets \$3 Million State Award

LAST YEAR, HUMBOLDT STATE UNIVERSITY teamed up with College of the Redwoods, K-12 school districts, the Humboldt County Office of Education, and business leaders to form the Humboldt Post-Secondary Success Collaborative. The goal? Do more to help North Coast students go to college.

The broad scope of the project—some 31 school districts, from Trinidad to Bridgeville, are involved—has attracted attention. The Collaborative is now one of 14 winners of the state’s Awards for Innovation in Higher Education, and was recently awarded \$3 million to help expand the effort.

“The goal is to change the dialogue of decision making at the high school and elementary school level. The Collaborative will also support very comprehensive professional development for local educators, that focuses on what HSU has to offer for our students,” says Heidi Moore, a program coordinator from the Humboldt County Office of Education. “We want to give them more ways to get students excited about going to college.” The office worked closely with Humboldt State University to earn the award.

The Collaborative formed to tackle challenges of getting more Humboldt County students to succeed in K-12 and graduate ready

for college. Reports show that 36 percent of Humboldt County’s fourth-graders are lacking in math and reading skills. With a focus on college readiness, the goals of the Collaborative include:

- Graduate more Humboldt County students who are competent in math and English, and have completed required courses for CSU or UC admission.
- Clear the path for transferring between College of the Redwoods and HSU to ensure students complete their education on time.
- Make sure students who enroll in college have a clear financial plan.
- Help students from traditionally underrepresented groups graduate at the same rate as their peers.







Abigail Petersen and Samantha del Campo (far left) give donors Don Bremm and Sharon Hanks (far right) a tour of HSU's cell culture lab. There, Professor Amy Sprowles shows the cryopreservation system where mice neural stem cells are stored.

# With Winery Success, Alumni Fund Stem Cell Internship

**THE CONNECTION BETWEEN** wine and stem cell research isn't immediately obvious, but after you get to know alumni Don Bremm ('88 Natural Resources) and Sharon Hanks ('79 Psychology), owners of Moonstone Crossing Winery in Trinidad, Calif., it starts to make perfect sense.

With a family history of cancer and oncologists in the family, Bremm and Hanks know the positive impact stem cell research can have on health outcomes. Pairing that experience with a desire to give back to the community brought them to Amy Sprowles, professor of Biology at Humboldt State.

"We knew we wanted a specific giving opportunity that spoke to our passions, a way to give that would allow us to really make a difference. After attending a talk given by Amy about her research and then meeting one of the students working in her lab at the winery, we knew helping with the stem cell research happening at HSU was the right fit for us," says Bremm.

Hanks and Bremm decided to establish the Moonstone Crossing Cancer Research Assistantship, a summer internship in the stem cell laboratory at HSU.

"We wanted to keep our giving local, as alums we have a fondness for HSU, and Amy is running a great program," says Hanks.

Funding a student research assistantship appealed to Bremm and Hanks. "If you're supporting the growth of a person, you're making a long-lasting difference," says Bremm.

Cellular and Molecular Biology majors Abigail Petersen and Samantha del Campo were thrilled to learn they were chosen as this year's student research assistantship winners. As they both consider medical school, the lab opportunity gives them hands-on experience that will help them decide whether they want to practice medicine or pursue research.

"I've learned that research can be really difficult at times and frustrating, but also very rewarding," says Petersen, who's worked in the lab for the past year.

"We hope to keep funding the award and want to inspire others to give to their passions as well," says Bremm.

## CSU Milestone: 3 Million Living Alumni

**WITH THE CLASS OF 2015**, the California State University system reached a major milestone—exceeding 3 million living alumni worldwide.

Each year, the CSU graduates 100,000 students, making it California's largest source of bachelor's degrees.

Statewide, one in 10 employees is a CSU graduate, and one in 20 Americans with a college degree earned that degree at a CSU campus. Sixteen members of the 114th Congress are among the thousands of CSU alumni working in the Washington, D.C., area.

The CSU celebrated with the Class of 3 Million online yearbook. View it at [classof3million.calstate.edu](http://classof3million.calstate.edu).



# Program Inspires Kids in Rural India



Meenal Rana

**HSU EDUCATION PROFESSOR MEENAL RANA** knows that spreading ideas like environmental responsibility and health awareness among young people can have a huge impact on everyone.

That's why she became involved with the Environmental and Social Research Organization, or ESRO, a non-governmental organization in rural northern India that focuses on raising awareness of issues that affect the well-being of Indian people. ESRO tackles issues like waste management, sanitation, water resources, health system, rural development, livelihood and improvement of urban

slums, forestry, and eco-development.

"We had 56 youth involved from rural private schools and they all had lots of enthusiasm, especially because they connected to something bigger than them—a university thousands of miles away in California. They loved the HSU connection," says Rana.

The environmental education program Let's Save Our Mother Earth put students to work designing and building gardens with recycled supplies. Students also participated in Eat Right to Live Bright, a nutrition and physical education program that included a 5k run and a signature campaign with the aim of raising awareness of health issues. Empowering ninth-graders with this knowledge had a broad impact. With Indian schools organized to serve students from kindergarten through 12th grade all on one campus, educators capitalized on opportunities to share this knowledge with both older and younger classmates.



Ninth-graders in the Environmental and Social Research Organization planted trees to raise environmental awareness in rural northern India.

The newest ESRO projects involve a group of ninth-graders who will be mentored by last year's students. The 10th-graders will also help evaluate the program to make sure students are improving their grade point averages, and finding value in the work. Rana is especially interested in the potential research aspects of this work, whether that involves tracking the self-development of girls in rural India or involving her own students from HSU's Department of Child Development.

# Students Shine in California Research Competition

**HSU STUDENTS WON SEVERAL TOP HONORS** for their scholarly research and creative activity at the 29th Annual CSU Student Research Competition.

Six students—picked as this year's "HSU's Outstanding Student Researchers"—were selected to represent HSU at the May competition.

**Here are the results:**

## Biological and Agricultural Sciences (Graduate)

**Second Place:** Madelinn Schriver, Forestry & Wildland Resources

**Title:** "Establishment and Growth Patterns of Oregon White Oak and California Black Oak Woodlands in Northwestern California"

## Biological and Agricultural Sciences (Undergraduate)

**First Place:** Haley du Bois, Biological Sciences

**Title:** "Dissecting the Role of MAPK Signaling in the Tumor Promoting Properties of Lethal Giant Larvae 1 (Lgl1) in Primary Neural Progenitor/Stem Cells"

## Humanities and Letters, Creative Arts and Design, and Interdisciplinary (Graduate and Undergraduate)

**First Place:** Joao Paulo de Sordi Curti (Undergraduate), Forestry & Wildland Resources

**Title:** Interactive Trails Map

## Engineering and Computer Science (Undergraduate)

**Second Place:** Jairo Luque Villanueva, Environmental Resources Engineering

**Title:** "Forward Osmosis-Direct Contact Membrane Distillation Sewer Mining Waste to Resource System"

## Physical and Mathematical Sciences (Undergraduate)

**First Place:** Nathan Graham, Geology

**Title:** "Determining Magma Mixing Duration and Dynamics Through Analysis of Reaction Rims on Olivine Crystals in Natural Samples of Black Dacite From the 1915 Eruption of Lassen Peak, CA"

## Engineering and Computer Science (Graduate)

**Nominee:** Sylvia Nicovich, Geology

**Title:** "Latest Pleistocene to Holocene River Terrace Deformation within the Southeastern Extent of the Little Salmon Fault Zone, Van Duzen River, Northern California"



# 'Major' News for Recreation Administration Program



As the industries of recreation, tourism, and leisure services rise in popularity, so, too, does HSU's Recreation Administration program.

**TO READY STUDENTS FOR A CAREER** in the rapidly growing business of fun, HSU now offers Recreation Administration as a Bachelor of Arts degree program. Recreation Administration has been available as a Liberal Studies degree program since the 1970s. The new status is expected to give it more visibility on and off campus and, in turn, attract more students.

The professional field of recreation, tourism, and leisure services is broad and diverse—and apparently burgeoning: It's among the largest and fastest-growing industries in the world.

The program offers concentrations in Tourism Management and Outdoor Adventure Recreation. Courses examine everything from the role of play and leisure in society (REC 200) to geotoursim (REC 435). Recreation Administration also provides a strong theoretical base in business (marketing and management).

The program also emphasizes practical experience. Students, for example, will work with various parks, agencies and groups to organize a trip, which entails making sure everything's organized and that all the proper permits have been obtained.

"We prepare students for the workforce," says Chris Hopper, chair of the Department of Kinesiology & Recreation Administration. "The advantage of the Recreation Administration degree is that it's workforce-oriented and gives students specific career skills."

# Researchers Team with NCAA on Concussion Study

**HSU'S NORTH COAST CONCUSSION PROGRAM** has received a \$242,000 grant from the NCAA and the U.S. Department of Defense to research the history and impact of concussions on college athletes.

The research is part of a \$30 million NCAA-U.S. Department of Defense initiative that funds the most comprehensive study of concussion and head impact exposure ever conducted. The initiative also supports efforts aimed at concussion safety, reporting, and management.

The study will include an estimated 25,000 male and female NCAA student-athletes around the country over a three-year period.

Participants will receive a comprehensive preseason evaluation for concussion and will be monitored in the event of an injury.

At HSU, researchers will conduct baseline and post injury monitoring—up to six months after injury—of neurocognitive, motor control, and behavioral data in approximately 400 HSU athletes from all sports.

The North Coast Concussion Program provides baseline and post-injury management services for thousands of Humboldt and Del Norte County residents each year, including at HSU, regional high schools, and youth and adult sport leagues.

# Centers Support HSU's Growing Diversity



Araceli Diaz



John Johnson

**HSU STUDENTS NOW HAVE ACCESS** to two new Cultural Centers for Academic Excellence, where they can create community, build on academic achievement, and affirm their identities as students of color.

"We're excited to open the new Latin@ and African American Centers for Academic Excellence, to add to the many existing student support programs on campus," says Radha Webley, associate vice president of Retention & Inclusive Student Success, which oversees a number of student programs.

"Together, they help support hundreds of students in achieving their personal and academic goals by providing academic mentorship and leadership opportunities, fostering connections to faculty, staff and campus life, and, importantly, creating opportunities for cross-cultural community-building and collaboration."

The African American Center for Academic Excellence (AACAE) and the Latin@ Center for Academic Excellence (LCAE), are the new additions to a suite of support offices.

The goal is to support students, help them feel engaged with campus, and to support opportunities for collaboration among students.

"The new centers are important because they deliver support students need in a culturally-relevant way. New students interact with staff and upperclass mentors who share their experience and

know the challenges and opportunities they face. We hope that any student who comes to the Latin@ and African American centers will really feel at home," says Adrienne Colegrove-Raymond, who directs the Centers for Academic Excellence.

John Johnson is the coordinator of the African American Center for Academic Success. He joins Humboldt from Edward Waters College, where he was chair of the Department of Social and Behavioral Sciences.

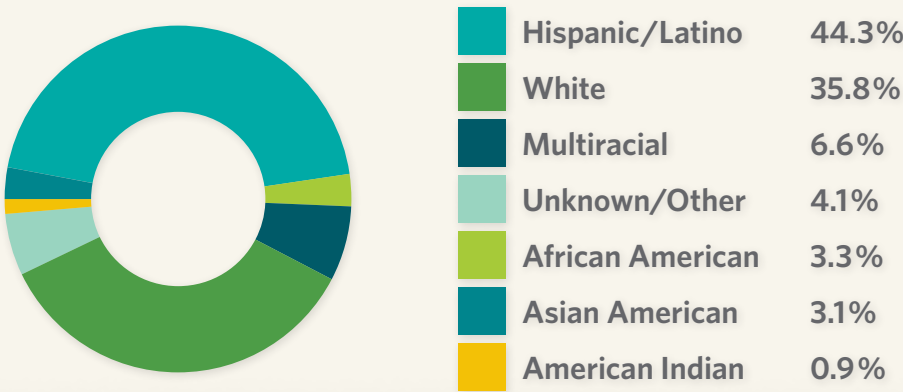
For Johnson, he finds excitement and opportunities in the center's potential impact as a new resource on campus. He explained, "The mission of the African American Center for Academic Excellence stands on five pillars: to educate the campus about black cultural expression, politics, history, and scholarship; advocate on behalf of students; innovate to make the most of our resources; elevate by improving the campus climate; and celebrate by acknowledging student achievements."

"We want to help create relationships, among the students who come to the center, faculty and students. Creating those relationships can go a long way," says Araceli Diaz, who joins the campus as the coordinator of the Latin@ Center for Academic Excellence.

Before coming to HSU, Diaz was a college success advisor at Benito Juarez Community Academy High School. "I was often the first person to talk to these students about university, so I can see how important it is to have someone help explore opportunities that exist on a college campus."

The centers are housed in renovated space featuring computer access and small meeting spaces. The schedule will include drop-in hours, study sessions, mentor sessions, and more. The shape of daily life in the centers is up to the students who utilize the services. "I want students to put their voices into the center," says Diaz.

## Projected race/ethnicity of new Fall 2015 freshman





# CampusScene | Costume Shop

**STEP INTO THE COSTUME SHOP** in the Theatre Arts Building and you'll find students creating costumes for a variety of stage and screen productions. Here, they're putting the finishing touches on clothing for Professor Sharon Butcher's 2015 Spring Dance Concert. Here are some highlights:

Each year, the University presents 10-15 theater, film and dance productions—about half of which are written, performed and directed by students. The shop supplies costumes for many of those shows.

There, Theatre students focusing on Design & Technology learn the basics of costuming such as fabric options, color theory, sewing, patterning, dyeing, mask making, and millinery.

The shop has large windows and plenty of natural light, making it easy to conduct detail work. It also features a dye vat—a professional cooking pot that allows students to dye fabric in-house. "It's an incredible luxury," says Catherine Brown, costume shop manager.

No experience? No problem. You'll typically find Theatre majors inside the shop, but students of all skill levels can schedule lab hours to learn the basics of costuming, and take lessons in hand and machine sewing.

Besides creating costumes, the shop provides accessories and clothing to the MultiCultural Center and other student clubs for festivals and displays.







# Planting Seeds for Forestry's Future

By Dan Pambianco

ON THE NORTH SLOPE of a hillside forest, just beyond the sun's late-winter reach, an experiment is taking place. Its results might offer an alternative to forest management that could change the future of the timber industry.

"Making it patchy like this is a novel approach to managing a forest," says Pascal Berrill, Humboldt State professor of Forestry & Wildland Resources. "Cutting only the trees that you don't want and leaving the more valuable trees standing is counter to common practice."

Students in Berrill's Forest Restoration class are testing that concept, one that thins out deciduous trees like tanoak, making more nutrients available for higher-quality wood produced by Douglas fir and redwood trees. In the spring, they spent several Saturdays at Humboldt State's L.W. Schatz Demonstration Tree Farm, applying their muscles and minds to the project.

"Before they're writing management plans for 10,000 or 100,000 acres, it's better for future foresters to experience the process by doing it," Berrill says. "I can talk about it all I want in the classroom, but these students will remember it."

Located 24 miles southeast of campus off a slow-driving, winding road, the tree farm provides an excellent laboratory for Berrill's students, along with others taking classes like Soil Science, Tree Physiology, and Fire Management. The 385-acre site was donated to the university in 1987 by Louis W. Schatz.

Since arriving at HSU seven years ago, Berrill has used the farm's resources for both undergraduate and graduate students.

"I've designed these restoration projects so they can be studied," he says. "This is going to be a master's thesis once they've grown a bit ... probably a couple of master's theses."

During a typical Saturday session, students carefully remove the marked trees from a 1 ½-acre plot of land, the growl of chainsaws limiting conversation. Other students roll logs downhill to another crew that forms a human chain, tossing timber to one another on the way to a truck waiting on the dirt road below.

The resulting load of small logs doesn't go to waste. After leaving the farm, it's used by the HSU Logging Sports club for practice and competition, eventually becoming firewood. That final step generates funding for a department scholarship fund.

As the clearing process slows down, many of the 48-student workforce, made up of students enrolled in

Berrill's two class sections, turned their attention to planting. Berrill demonstrates the process he learned at college in his native New Zealand.


"Clear the organic material and get down to the mineral soil," explains Berrill, who paid for his undergraduate education working as a tree planter. "I want to cultivate the soil any way I can, dig a hole, plant a little tree, and move the soil back in. We want to make the soil pop up, break apart. I want my little roots spreading out into cultivated soil."

Following their teacher's lead, students get busy planting 20 redwoods and 15 Douglas firs in each 1/10th-acre parcel within the plot. After covering the root system with rich soil, they tamp it down, leaving a little ring for water catchment. The Douglas fir seedlings—a tasty favorite of deer—are surrounded by protective rings of mesh anchored in place by a small biodegradable bamboo pole.

"Working out here, we're not only learning about forest management, but also about watersheds and the entire ecosystem," says Quentin Matilton, a junior Environmental Resource Management major from nearby Hoopa, Calif. "I want to take what I learn here and apply it in my community."

While the project is focused on efficient, sustainable forest management for economic purposes, its scope has multiple educational applications. Students from a variety of disciplines are typically attracted to the class.

"Pascal is very knowledgeable and has a light-hearted sense of humor that makes his lectures engaging and open for participation," says Salvador Silahua, an Environmental Restoration student. "His labs and field trips get us outside and allow us to learn by doing. We work in small, interdisciplinary groups and we all learn from each other."

"Some students are more production oriented, and some are more interested in restoring degraded forest systems," Berrill says. "Both are important objectives that require care and creativity, and combine well. Deriving product and revenue can be a benefit of restoration thinning in crowded fire-prone forests." 

**OPPOSITE PAGE:** Throughout the spring, students in Forestry Professor Pascal Berrill's Forest Restoration class prepared the soil and planted redwood and Douglas fir seedlings within the 1 1/2 acre L.W. Schatz Demonstration Tree Farm experimental plot. They used a GPS device to log the locations, which will help future classes monitor each tree's progress.



**"It's better for future foresters to experience the process by doing it. I can talk about it all I want in the classroom, but these students will remember it."**

Forestry Professor Pascal Berrill





PHOTO ESSAY

# CLUB SPORTS

From mountain biking to Quidditch, club sports have a devoted following at HSU. Students of all levels can join one of HSU's 15 competitive and seven non-competitive clubs, or start their own. Anyone can walk up to the field—no experience necessary.



## REACHING NEW HEIGHTS

Each year, the HSU climbing club competes against teams from around the country in the USA Collegiate Climbing Series National Championships. Climbers also have a chance to show off their skills at the annual Bouldering Competition held every spring in the Student Recreation Center.



## PADDLE PUSHERS

Since 1975, the men's crew team has taken home several gold medals, most recently winning the Novice Lightweight 4 at the Western Intercollegiate Rowing Association Championships. The team competes throughout the school year, participating in one to two races in the fall and five to six in the spring.

## GOING FOR A TRY

Since 1995, the women's rugby team has been named conference champion six times. This season, the team placed first in its conference and competed in two national playoffs. They're currently ranked 8th in the nation for Division II Women's Rugby for 15- and 7-person teams.







## UP TO BAT

Club baseball finished with a record of 10-11 in the Southern Pacific North Conference in the National Club Baseball Association last season. They also played conference and non-conference games against schools like St. Mary's College, U.C. Berkeley, Sacramento, and Sonoma State.

# SOMETHING for EVERYONE

## COMPETITIVE CLUB SPORTS

- ARCHERY
- BASEBALL
- CHEER
- CLIMBING
- MEN'S CREW
- CYCLING
- ULTIMATE DISC (MEN'S AND WOMEN'S)
- DISC GOLF
- FENCING
- LACROSSE (MEN'S AND WOMEN'S)
- RUGBY (MEN'S AND WOMEN'S)
- MEN'S VOLLEYBALL  
(pictured bottom right)

## RECREATIONAL CLUB SPORTS

- ACRO YOGA
- BEACH VOLLEYBALL
- CIRCUS
- JUGGLING
- QUIDDITCH  
(pictured top right)
- WRESTLING



## EYE ON THE TARGET

Humboldt State archery has been represented at the California State Indoor Archery Championships since 2007 and at the National Indoor Archery Championships since 2008, with archers placing in the top 20 at both competitions. In 2015, the club brought home 18 medals from state, regional, and national competitions.





# FITNESS for ALL

## Adapting Exercise for Children with Disabilities

By Dan Pambianco

**His team was trailing the Giants 5-0 when Darth Vader stepped up to the plate. He scowled when the score was announced, then swung his light saber and drove the ball into center field. After circling the bases, Darth joyously announced the new score: 100-5.**

CHARLIE ROBINSON—AKA DARTH VADER on this day—is a 9-year-old with Down syndrome. On a summer afternoon, he and his 7-year-old brother, Calvin—aka the Giants—were enjoying a game of tee ball in Redwood Bowl. Nearby, Humboldt State students who were enrolled in an intensive, one-week class took notes.

To meet the needs of children with disabilities like Charlie, skilled educators are badly needed, says Kinesiology professor Chris Hopper. Along with Department of Kinesiology & Recreation Administration faculty members Rock Braithwaite and Jayne McGuire, Hopper has developed an Adapted Physical Education (APE) program that answers the call for specially-trained teachers.

Charlie Robinson enjoys a game of baseball during the summer session of the Adapted PE curriculum. Children work with credentialed teachers and credential candidates who are adding skills to serve children with disabilities.

*“There seems to be a lack of opportunities for kids who have disabilities to engage in recreation and fitness activities. As soon as parents hear about HSU Fit, they want to sign their children up.”*

Recreation Administration  
Professor Jayne McGuire





“WE’VE REESTABLISHED THE FULL CURRICULUM, with adjustments for some classes we didn’t have previously,” says Hopper. “There is a statewide shortage of teachers trained in adapted physical education, and we want to be a part of addressing that problem.”

APE adapts activities for the special needs of children with disabilities. Through the program, teaching credential students and currently credentialed teachers help children enjoy the benefits of physical fitness. Also gaining experience are undergraduate students in a variety of majors who have the opportunity to participate in the actual fieldwork through the HSU Fit component.



A grant secured by Chris Hopper has revitalized the Adapted PE curriculum, covering tuition and fees for teachers involved in the supplemental skills program

*“One of the primary areas of concern for children with disabilities is health. We hope to prepare teachers who are capable of providing good quality services that include health education, and also support parents of disabled students.”*

Kinesiology Professor Chris Hopper

In the summer of 2013, Hopper secured a \$1.2 million U.S. Department of Education grant to jump-start the program. The bulk of the funding goes toward paying students’ tuition, which encourages the number of applicants.

The new curriculum began in the fall of 2014, and one year into the ramped-up effort, the APE program is already attracting a steady flow of future teachers. Its inaugural class will graduate in December and will include students who have completed single-subject or special education teaching credentials with a special authorization in adapted PE. After completing thesis work, many will add a master’s degree in APE to their résumé.

Hopper points out that the APE program provides undergraduates with field experience that propels them into the credential program far ahead of the curve.

“In the early stages, undergraduates have come in with very limited experience working with children,” Hopper said. “It takes a while to figure things out, especially when you’re looking at a fairly broad range of disabilities. If we get them in early, they’ll be much more prepared.”

To provide that hands-on experience, Hopper and his staff have sought out local groups that support children with disabilities. Their services provide a substantial fieldwork component for credential candidates, undergraduates, and graduate students.

“The partnerships that are successful are with people and organizations who know what we’re looking for, and know that they can supply it,” Hopper says.

Classes like the directed field study summer session offer an opportunity to connect with the community. Another productive connection is through the local Special Olympics committee, which students have partnered with to organize and produce bocce ball tournaments and a popular high school basketball league. Despite those relationships, more options to practice new skills are needed, leading to the creation of HSU Fit.

### HSU Fit

IT’S FRIDAY EVENING, and the HSU pool is swamped with activity during an HSU Fit session. Bradley Carr, one of the older participants at age 18, is intent on making the biggest possible splash as others cheer him on. Bradley’s goal notwithstanding, the program’s greater objective has a ripple effect on all children with disabilities.

Conceived by McGuire, HSU Fit is a program for children with disabilities ages six to 18. Paired with peer partners—undergraduate students enrolled in McGuire’s REC 480 Practica course—each child follows a routine that addresses individual fitness goals over six weeks.

“There seems to be a lack of opportunities for kids who have disabilities to engage in recreation and fitness activities,” says McGuire, who also teaches in the Special Education and Secondary Teacher Credential program. “As soon as parents hear about HSU Fit, they want to sign their children up.”



Under the direction of Recreation Administration Professor Jayne McGuire (right), the HSU Fit program offers fitness activities for children with disabilities and their siblings. Graduate students in education design the activities, and undergraduates in Recreation Administration work one-on-one with children, assessing their large motor skills and cognitive abilities.





# What is Adapted Physical Education?

ADAPTED PHYSICAL EDUCATION is physical education adapted or modified to be as appropriate for a person with a disability as it is for a person without a disability.

Federal law mandates that physical education be provided to students with disabilities and defines physical education as the development of:

- Physical and motor skills
- Fundamental motor skills and patterns (throwing, catching, walking, running)
- Skills in aquatics, dance, and individual and group games and sports (including intramural and lifetime sports)

APPROXIMATELY 56 MILLION AMERICANS have a disability. Facts gathered by the President’s Council on Fitness, Sports & Nutrition support why activity among disabled persons should be encouraged early in life:

- The obesity rate for children with disabilities in the U.S. is 38 percent higher than for children without disabilities.
- The obesity rate for adults with disabilities is 57 percent higher than for adults without disabilities.
- Adults with disabilities are physically active on a regular basis about half as often as adults without disabilities (12 percent vs. 22 percent).
- Significant disparities exist in access to health care, with 29 percent of people with disabilities showing unmet need compared to 12 percent for people without disabilities.

Beyond the primary function of directly serving children with disabilities, the program also considers the non-disabled siblings and parents.

“When families have a child with disabilities, their brothers and sisters are often recreating in a different program,” McGuire says. “It’s a nice opportunity for disabled and non-disabled children to participate together.”

During the spring session of HSU Fit, Calvin Robinson, joined his brother, Charlie, for the Friday evening activities. According to Calvin’s peer-partner, Kanica Yiep, his inclusion has a distinct effect on Charlie.

“Calvin motivates his brother,” Yiep said. “Earlier, Charlie didn’t want to participate. He was resistant, but he saw his brother getting excited, and that encouraged him to join in.”

Another component of HSU Fit focuses on parents, who often need a break from the responsibilities of raising special needs children. During the Friday night activity slot, they can participate in an adult wellness program that offers cardiovascular training, yoga, relaxation, and other healthy pursuits. Parents can also use the time to shop, catch a movie, or go out to dinner.

“We took off hiking in the forest with our preschooler,” said Charlie and Calvin’s mother, Kim Robinson. “We were that confident in the program that we did not feel like we needed to stay and assist.”

The third component is teaching credential candidates working on their physical education authorization. They plan what is happening in the gym, what goes on in the dance room, and how pool activities are structured. They’re also responsible for training the peer partners, representing the final layer.

While the parents take a break, those peer partners take over, guiding children through their activities and monitoring progress. Students enrolled last spring came from a variety of majors, including Child Development, Psychology, Dance, Kinesiology, and Recreation Administration.

“What I appreciated most about HSU Fit was the program’s desire to adapt to the participant so they could engage the program with the same effortlessness as their non-disabled peers,” Robinson said. “For my son, who is very sensitive about his abilities and how other people view him, this aspect of the program was the most critical. He was able to feel successful, and, for lack of a better term, normal, with the way the program adapted to fit his needs.”

## Adapted Physical Education

APE IS A PHYSICAL EDUCATION PROGRAM that has been modified to allow students with disabilities to participate in activities. Since the passage of the Individuals with Disabilities Education Act (IDEA) in 1990, the federal government mandates schools to provide adapted physical education services. Still, shortages of well-trained teachers have been a problem.

*“Studies have demonstrated that there are specific connections between being fit and cognitive abilities. Trained teachers can help address the behavior variables that contribute to a lack of fitness among students with disabilities.”* Kinesiology Professor Rock Braithwaite

Part of any curriculum in Adapted PE focuses on health concerns of children with disabilities. Many have physical limitations that reduce their ability to exercise, another major challenge addressed by adapted physical education.

“One of the primary areas of concern for children with disabilities is health,” Hopper says. “We hope to prepare teachers who are capable of providing good quality services that include health education, and also support parents of disabled students.”

Recent figures from the Centers for Disease Control and Prevention show that childhood obesity rates among students with disabilities are much higher. In addition to challenges with exercise, certain medications can cause weight gain.

Children with disabilities may also tire more easily, experience adverse reactions to heat and cold, and have mobility issues. Compounding the problem is limited access to modified facilities and equipment.

Equally important is the positive effect fitness has on brain processes. For instance, learning the rules of specific activities, like soccer, or how to keep score can be easily incorporated in fitness programs.

“Studies have demonstrated that there are specific connections between being fit and cognitive abilities,” said Rock Braithwaite, coordinator of Kinesiology graduate studies. “Trained teachers can help address the behavior variables that contribute to a lack of fitness among students with disabilities.”

In addition to running the programs for kids, the professors and students are also conducting research. Braithwaite is leading the research component, starting with a meta-analysis—a method of gathering statistics that can be combined and contrasted with other surveys to identify patterns and relationships.

“What our students are doing is looking at evidence-based practices that facilitate the best results for students and teachers,” Braithwaite said. “After the first series of



studies comes out in the late spring, we’ll use that information to develop and design new studies to identify what we don’t know.”

## Teaching Teachers

SEVERAL CURRENT STUDENTS are veteran teachers seeking master’s degrees in APE. After earning a bachelor’s degree in Recreation Administration at HSU in 2014, Quinn Pawlick decided to apply for the special education creden-

tial program, motivated by his experience volunteering with Special Olympics. He earned his mild-to-moderate special education credential in the spring of 2015, then added the moderate-to-severe authorization in the summer. He plans to finish his master’s degree in Adapted PE during the 2015-16 academic year.

“It fits in perfectly with my career goals,” said Pawlick, who busied himself assessing motor skills while a dozen children played baseball, soccer, and other games in Redwood Bowl. “They don’t feel like they’re being tested. It’s just a game. We look for things like their arm swing and if they’re running on the balls of their feet.”

Another student, David Pauls, has been teaching physical education in the St. Helena school district for 18 years. Observing an increase of students with disabilities at Robert Louis Stevenson Elementary, he felt a need to upgrade his methods.

“I’ve recognized that I need to have more skills to be able to work with the students, to meet their needs,” said Pauls, who plans to complete his master’s thesis and graduate in 2016. “Seeing them enjoy activities without putting limits on themselves is rewarding. They’ll give anything a try, and have the resilience to try something without fear of failure.

“But the most rewarding part is when you meet with their parents and tell them what their child has been doing in class,” Pauls said. “They’re amazed at the progress their children have made, and they’re very grateful. It’s nice for a teacher to get that feedback.”



# FITTER FOR DUTY

## CREATING BETTER (AND LIFESAVING) WORKOUTS FOR FIREFIGHTERS AND COPS

By Aileen Yoo

**The number one killer of firefighters nationwide isn't burns or smoke inhalation.**

ACCORDING TO THE U.S. FIRE ADMINISTRATION, the leading cause of fatalities from 2004 to 2013 is stress/overexertion. "It's not uncommon for firefighters working at a scene or just after an incident to die of a heart attack or other stress or overexertion related illness," says Arcata Fire District Battalion Chief Sean Campbell.

To help better manage the physical and emotional demands of their jobs, Campbell, other AFD firefighters, Humboldt Bay Fire Department, and Humboldt State University Police Department officers are taking part in a pioneering HSU training and fitness program for local firefighters and police officers.

Developed by Kinesiology Professor Young Sub Kwon, the new program creates personalized training regimens, which are expected to improve fitness and, in turn, increase endurance of stress.

"Many firefighters and police officers are not healthy because their jobs put them under stress," says Kwon, recipient of the University's McCrone Promising Faculty Scholars Award in 2015. "For example, police officers are often driving. If they need to pursue a suspect on foot, there's no warming up. They have to run as fast as they can. Through a fitness program, I can help improve their capacity to run without warming up."

Kinesiology Professor Young Sub Kwon makes his way up a culvert pipe during Arcata Fire District's confidence course. This exercise is one of many demanding obstacles designed to simulate firefighting scenarios.

**"IT'S NOT UNCOMMON FOR FIREFIGHTERS WORKING AT A SCENE OR JUST AFTER AN INCIDENT TO DIE OF A HEART ATTACK OR OTHER STRESS OR OVEREXERTION RELATED ILLNESS,"**

Arcata Fire District  
Battalion Chief Sean Campbell



**'YOU CAN LET YOURSELF GO'**

Kwon's research highlights another issue: Once recruits become a firefighter or police officer, they are not required to meet fitness benchmarks.

California police officers are not subject to physical requirements, says University Police Department's Sgt. John Packer, who along with other UPD officers is participating in Kwon's program.

It's generally the same story nationwide for career police officers and firefighters.

"It's up to individual departments to implement physical requirements, and those departments are few and far between," says Lt. Chris Mulligan of the Broward County Sheriff's Office in Florida. A former colleague of UPD Chief Donn Peterson, he works in the Training Division and is trying to launch a mandatory physical abilities test for detention and sworn law enforcement.

Cases in point: For the first time since 1999, FBI agents will have to pass a fitness test, according to the *New York Times*. Similarly, the U.S. Forest Service has an annual fitness standard. There are also recommended standards and guidelines issued by the National Fire Protection Association, which some agencies follow, and International Association of Chiefs of Police.

**"IF WE'RE GOING TO SERVE OUR COMMUNITY EFFECTIVELY WE NEED TO MAINTAIN A FITNESS LEVEL THAT'S ACCEPTABLE FOR OUR DUTIES. KWON'S PROGRAM ISN'T JUST FOR OUR COMMUNITIES, IT'S FOR OURSELVES SO WE CAN GO HOME TO OUR FAMILIES EVERY DAY."**

Arcata Fire District  
Battalion Chief Sean Campbell



Kinesiology Professor Young Sub Kwon helps University Police Department's John Packer (top) and Arcata Fire District's Sean Campbell (right) manage the stress of their jobs. For a firefighter, that means being physically and mentally ready to climb across wires, use heavy and unwieldy equipment, and run into burning buildings (opposite page), as shown in these training exercises.





Campbell puts it simply: “You can come in as a new firefighter and be completely fit day one and then you can let yourself go after that.”

“If we’re going to serve our community effectively we need to maintain a fitness level that’s acceptable for our duties,” he says. “Kwon’s program isn’t just for our communities, it’s for ourselves so we can go home to our families every day.”

### SOME PAIN, MUCH TO GAIN

Kwon’s experience working with law enforcement began in Kansas at Washburn University, where he was the lead researcher for a fitness testing and training project for the Topeka, Kan., SWAT team, and for a similar project that studied youth in a rural school district.

Back at HSU’s Human Performance Lab, Campbell and others have found that Kwon’s tests aren’t walks in the park. They are rigorous runs on a treadmill—in addition to leg presses, bench presses, lat pulldowns, sideways sprints, and slew of other exercises.

Kwon’s program begins with a detailed picture of a person’s overall fitness, measured by two components: health (muscular strength and endurance, cardio respiratory fitness, and flexibility and body composition) and skill level (speed, power, agility, reaction time, balance, and coordination). Based on these assessments, Kwon creates an exercise regimen that gets progressively harder over 12 weeks.

Kwon emphasizes that participants are doing true exercise, not physical activity or sports.

“When I was a young man in Korea, I was a body builder and a ‘bboy’—break dancer—and at that time I wasn’t educated about what exercise is,” he says. “I was doing physical activity or extreme sports, not exercise, which is planned and structured physical activity. To do exercise you need data. Only a university—not a personal trainer—can accumulate data to make physical fitness norms for a special population.”



A pallet is set ablaze in a gutted McKinleyville home during a Live Fire exercise.

Even for Campbell, who runs marathons and ultra-marathons, the tests were surprisingly challenging.

“I’m not as fit as I thought I was,” he says with a laugh.

### SWEAT EQUITY PAYING OFF

Already, the firefighters who are participating in the study are seeing results. “We’d have a meeting and they’d bring in boxes of donuts,” says Campbell. “It used to drive me crazy. There’s been a cultural shift. People are eating healthy and they’re getting skinny.”

Campbell’s fitness improved as well. His initial 1.5-mile run speed was 9.4 mph. After four weeks, his speed increased 12.7 percent to 10.6 mph.

Also reaping the benefits of the program is the team of student interns and other volunteers who help Kwon with his research, giving them a chance to apply what they learn outside the classroom.

“I found that working one-on-one like this—building rapport, motivating them, correcting form, understanding and explaining the importance of the evaluation process—has been invaluable,” says Kinesiology graduate student Gil Spitz.

Being able to provide that real-world experience makes HSU the perfect place to conduct his research, says Kwon. “I believe being at HSU has helped my research, and allowed me to perform community service and get my students involved for a better teaching environment. This is perfect to me.”

Kwon was recently awarded \$5,000 through HSU’s College of Professional Studies Faculty Research Fund, which will help fund more student assistants and equipment.

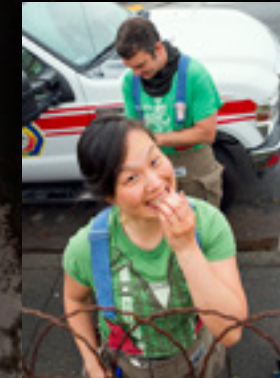
He has high hopes for his research. He envisions developing a program for all firefighters and officers in Humboldt County, and the Arcata Police Department has already expressed interest in joining the program.

Kwon also hopes that one day, other states can use his program as a model to improve fitness for their firefighters and police officers.

# FIREFIGHTER FOR A DAY

By Aileen Yoo

INSIDE THE HALLWAY of a burning home, the first thing I notice is the smoke. It’s light gray, almost silver. It’s thick. Through my mask I see firefighter Brett Kennard. Beyond him, I can’t see a thing—not walls, not the fire hose at our feet or the room just feet away where a fire is raging. And I can’t see Rescue Randy, the dummy I’m supposed to rescue.



I try to take slow, deep breaths to calm my sour stomach. I silently repeat the pointers I picked up in the eight weeks leading up to this moment: Breathe slowly. Go to your happy place. Two sets of three siren-blasts means get out. DO NOT take off your mask. I’m in good hands, I tell myself. I’m going to rock this fire.

It’s the morning of July 14 and I’m in the middle of the Arcata Fire District’s fire training exercise, a “Live Fire,” at a McKinleyville home that’s been gutted for this purpose. For the first time, the AFD is hosting “guest firefighters,” HSU Kinesiology Professor Young Sub Kwon, his two graduate students, Gil Spitz and Jack Thorpe, and me.

Invited by AFD Battalion Chief Sean Campbell, one of the biggest proponents of Young’s fitness and training program for local firefighters and law enforcement, we’re here to experience the rigors and stress of firefighting and to understand the important role fitness plays in a firefighter’s performance. Personally, I’m there because as a writer, I know walking in a firefighter’s boots would make a great story. HOW COULD I SAY NO?



So far, I have no regrets. Before finding myself in this hallway, I had been crouched inside the house, along with 20 plus firefighters, observing a fierce column of flames crawl up a wall and, later, a demonstration on extinguishing techniques.

Although terrified, I had stayed calm. The air was hot, but not that hot. My 70 pounds of gear? Not that heavy. The training I had done beforehand (moving more, eating less) has paid off. I had emerged physically and mentally unscathed.

Don't get me wrong, I'm nervous, which shows in the way I handle my gear. In between exercises I've forgotten my gloves and put my helmet on backwards. But I am exhilarated and ready to find Randy.

I'm with my team—an interesting bunch with varying levels of experience. The leader is Lt. Ross McDonald, a soft-spoken veteran with a kind face, and the easy-going Brett Kennard ('13 Kinesiology), a career firefighter as well. There are also two volunteers—Jeraud Williams (Child Development), who has formidable presence, and the energetic Matt Cendejas (Recreation Administration). Young, Jack, and Gil have been assigned to their own team and each group has been rotating through different duties, the main being Rescue and Fire Attack.

We're the Rescue team and after duck-walking our way around the living room and searching a small bedroom, we're waiting in a narrow hallway just outside the room where Young and his Fire Attack team are putting out a fire.

As we wait, I begin to feel uneasy. The smoke is relentless and it seems to be getting noisier. There are muffled shouts, Sean's voice crackling over radios strapped to everyone's chest, and piercing chirps of the SCBA alarm, which goes off when its wearer doesn't move.

Suddenly I hear: "Fire Attack! Where's Fire Attack!?"

It's Sean. Where is Fire Attack? Why's he asking where fire attack is? And who's putting out the fire? I hear thudding footsteps and then I'm roughly shoved against my compressed air tank, which is pressed tightly against the wall.

We've found Fire Attack. They're in the hallway, trying to squeeze past us.

I loathe crowds. Needless to say, with two teams, several bulky bodies in one 4-foot-wide hallway, it's very crowded. My throat constricts. There's shouting and more thuds. I can't move. I'm trapped. Where's the closest exit? Why the @#\*%!&%@ am I here? I'm going to throw up.

Brett looks over his shoulder and calmly announces that we're going to wait here until Fire Attack gets out of the way. He then tells us to slow our breathing and conserve air. "Breathe in, breathe out. Breathe out. Breathe in." But in the smoke and heat and chaos, my



heart's racing. I can't hold my breath. The feeling of nausea comes in a surge.

I clench Brett's arm. He looks back. "Are you okay?" I'm speechless and bug-eyed. Brett reassures me that I'm safe and that if I need to leave, he can get me out in seconds. "Do you need to leave?" I'm this far in. There is NO way I'm leaving. I shake my head.

The hallway opens up and we're on the move. Brett and I get on our hands and knees. He moves quickly, like a crab, sweeping the floor with the handle of his ax. Next to him, I can barely keep up. My fingers lightly touch the ground as though looking for a lost contact lens.

Brett stands and scans the room with his flashlight. The beam stops on a face—eyes open, expressionless, and

staring right at us. It's Randy. He's pinned under a pallet and for one startling second, he looks real. Brett flips over the pallet. I'm then asked to pick up a leg. My stomach does somersaults.

"Go to your happy place," says Ross. I'm not in my happy place. I'm in the least happiest place I know. Somehow I muster the will to grab a leg. Ross grabs the other and Brett picks up Randy's torso. Randy is heavy and unwieldy, forcing us to waddle awkwardly. I'm panting and my arms ache. I begin to regret not working out more.

We make our way back to the hallway, but Fire Attack is just in front of us. We've stalled and have been asked to wait. Brett, however, decides it's time to find another exit and apparently, I'm the one who's going to help find it.

"Door!" he shouts. I give him a blank look.

"Aileen! Door!"

Seriously? He wants me to do more? I look right and there's a faint trace of a door.

"Door!" Brett shouts.

Ohforgodsakes. I'm irritated that I'm being yelled at and that I'm the holdup. I'm about to tell him there's no knob but I'm too afraid to open my mouth because the toast I had for breakfast has pooled in my throat.

Suddenly, we're on the move again and waddle out the door. As soon as Randy's on the ground, I claw at my mask. I try to find a buckle, strap—anything—to pull it off. I'm frantic.

My teammates are around me and I feel some tugs and soon, the mask is off and I'm breathing real outside air. My face is swollen and sweaty. My knees are shaking. I'm asked if I'm okay. Yes, I mumble as I double over. I tell myself, do not vomit in front of everyone.

As the nausea subsides, I'm stunned. Stunned that what I thought was my strongest suit—my mental fortitude—had crumbled. After several minutes of cooling off and licking my wounds, I'm asked if I want to go back in, to attack the fire.



One of the Live Fire exercises entailed carrying a hose and extinguishing a fire inside the home. For me, the worst part was the smoke. Luckily, Matt, Jeraud, Brett and Ross had my back—I couldn't have asked for a better team.



There are times you have to walk away from a challenge. This is not that time. I need redemption. I put on my mask and helmet, but as we wait for the okay to go in, I begin to panic. Brett, who seems to sense my anxiety, sings "Come on Aileen," an annoying song from the '80s. The sight of a firefighter in full gear singing and jiggling makes me laugh and relax.

Cleared to go, we drag the hose in until we reach the same smoky back room. Ross and Matt are in front, at the nozzle, and I'm directly behind them. Ross commands to Matt: "Hit the fire!" The hose tightens from the rush of water. A thick white column shoots upward and hits the ceiling. The noise is jarring. I'm going to be sick.

I tap Ross' shoulder. "I think I'm going to throw up. I need to leave."

"Do we need to leave?"

Do we need to leave? Um, yes. We need to leave. NOW. Later Ross explained that he hadn't wanted me to miss the experience, but in the moment I can't believe he's not ushering me out.

I remind myself: this will be over soon. "I'm okay," I say. We search the steamy, drenched room in the crackling of the still smoldering fire.

After we pull the hose back outside, Matt says, "You did a great job."

"What exactly is a 'great job'?" I ask.

"You didn't pull off your mask."

That night, I lay in bed, exhausted, replaying the hallway scene in my head, thinking of how staying in shape is vital for a firefighter. As obvious as that was before, I (and my body) truly understood it. I was relieved to have this experience behind me and look forward to tomorrow, when I'll be at my desk. I'll be writing about the hallway and my near brush with vomit. I'll be away from smoke and heat and chaos and far away from fire. I'll hear news about the wildfires raging across the state and I'll think about the AFD—suited up, shouting through their masks and charging into the heart of a fire. No problem. 🧡



# Smart Energy Put to the Test

By Arianne Aryanpur

High-profile projects developed by HSU and Blue Lake Rancheria show what renewable power independence could look like one day.

ENGINEERING STUDENT



HSU Engineering Student Ellen Aparecida Nascimento Molina

FUTURE 500 kW SOLAR ARRAY



FUEL CELL



GASIFIER BUILDING



BATTERY SYSTEM



BIOMASS STORAGE BUILDING



IT ALL STARTED WITH AN HSU ALUMNUS. In 2009, David Carter ('05 Environmental Resources Engineering), an engineer at GHD, developed a plan for the Blue Lake Rancheria Hotel to boost its energy efficiency.

Around the same time, Engineering Professor Arne Jacobson was looking for a local business to partner with one of his classes. Carter suggested Jacobson connect with the Blue Lake Rancheria, which operates a casino and hotel about eight miles east of campus.

"I knew they'd make a great client for the University because of their interest in renewable energy projects," says Carter, now a senior research engineer at the Schatz Energy Research Center.

Soon, Jacobson's students were working on a solar water heating feasibility study for the Rancheria, setting the stage for a lasting partnership.

Over the past six years, that collaboration has grown to include innovative renewable energy projects that have attracted some high-profile partners and federal attention.

This summer, the Schatz Lab and the Rancheria received a \$5 million grant—the largest of its kind—from the California Energy Commission to build an electricity micro-grid at the Rancheria. Over the next two years, HSU students and Schatz researchers will work with Pacific Gas

& Electric Co., international technology giant Siemens, Idaho National Lab, REC Solar, and other partners to develop a renewable energy grid.

The state-of-the-art system will consist of a 0.5 MW photovoltaic array provided by REC, a 1 megawatt-hour battery storage system, a 175 kW biomass/fuel cell power system, and several diesel generators. The Rancheria is a nationally recognized Red Cross emergency shelter and the micro-grid will be able to provide continuous, renewable electric power in the event of a natural disaster.

Once the micro-grid is complete, about 50 percent of the casino and hotel's energy will come from renewable resources, outpacing the California Renewables Portfolio Standard by nearly half. A state mandate requires that 33 percent of California's energy come from renewable resources by 2020.

From micro-grids to biomass, the Schatz Lab and the Rancheria are creating a national model for renewable energy projects. Last year, the Obama Administration named the Tribe one of 16 Climate Action Champions—along with communities like Seattle, San Francisco and Boston—that lead the nation in climate action.



IN MANY WAYS, partnering with the Rancheria was a natural step for the Schatz Lab, which had already made a name for itself with projects like the hydrogen fuel cell-powered car and LED lighting in developing countries. “The Tribal Council and Tribe in general have a real interest in renewable energy, which makes them a great partner for the type of work we do,” says Jacobson, who, in addition to being an engineering professor, serves as director of the Schatz Lab.



James Zoellick, of HSU's Schatz Lab, explains the biochar, dust collection, and cooling components of the biomass system.

“It was a risk because nobody else had done it before,” explains Ramsey. “But the researchers up at Schatz literally worked day and night on the engineering and now, nothing else compares to it.”

Beyond campus, the partnership is having a big impact on the community.

In 2012, for example, students in an engineering capstone class co-taught by Jacobson and Professor Margaret Lang created a biodiesel production system for the Blue Lake Rancheria Transit System,


a public bus that connects Arcata to the Mad River Valley. The system uses waste oil from the casino restaurant kitchen to fuel the buses. Their design reduces greenhouse gas emissions by 80 tons, and also results in \$5,000 savings for the Rancheria annually, which in turn is used to maintain the transit service.

Engineers from the Schatz Center also installed two dual-port electric vehicle charging stations at the Rancheria earlier this year.

The Schatz Lab's partnership with the Tribe has also provided numerous hands-on learning opportunities for student researchers, interns, and volunteers.

Ellen Aparecida Nascimento Molina is a foreign exchange student from Brazil in Engineering who is interning for the Rancheria, where she's analyzing the feasibility of installing solar photovoltaic modules on the hotel, casino, and other buildings. Molina is exploring how much energy the modules could generate and how much it would cost to install and maintain them. She's also working on energy efficiency measures throughout the property.

Regardless of whether her work is implemented, interning for the tribe has been an invaluable experience, she says. “Before coming to HSU, I had no experience in renewable energy.” Now, she's considering a career in environmental consulting. “It's been amazing because it's opened my eyes to possible careers.”

Jacobson says the partnership is having a multi-layered impact. “It's not only benefiting the Rancheria, but also our students and the community,” he says. “On a larger level, it's contributing to our understanding of renewable energy in the state and the country. Ultimately, our hope is that this work will have a lasting impact for years to come.” 

Jana Ganion, the Rancheria's communications and energy director, attributes the Tribe's commitment to sustainability in part to Native American culture and its emphasis on understanding and respecting the environment. “Native American tribes, traditionally, have a great respect for the carrying capacity of the land,” she says.

Ganion oversees renewable energy projects, climate action initiatives, and policy and communications for the Rancheria, which sits on 91 acres in the ancestral territory of the Wiyot people.

The Blue Lake Rancheria Tribal Council has worked diligently to define its vision, goals, and policies regarding the environment and its natural resources, she explains. “The message the Council has put forward is that you do not approach natural resources with a sense of entitlement. The approach is one of gratitude and balance.”

Arla Ramsey, vice chair of the Blue Lake Rancheria Tribal Council, says that both HSU and the Rancheria have been willing to take risks when it comes to clean energy. “We take chances sometimes with projects that have a little bit of the unknown to them. But if it's going to end up giving us a cleaner, viable energy source, we're willing to give it a try,” she says.

This summer, for example, Schatz Lab engineers wrapped up work on a biomass power system at the Rancheria that generates hydrogen fuel—a previously untapped technology. HSU researchers and other project collaborators worked to develop a new system that turns sawdust from locally sourced timber into hydrogen gas. Once it's operational, the system will power a proton exchange membrane fuel cell that creates electricity for a third of the casino and hotel. The system burns clean, eliminating the pollution often associated with biomass.

## Renewable Energy Projects

### Micro-grid

An energy system that integrates a new photovoltaic and storage battery with existing biomass and diesel generators. It will be developed with high-profile partners including PG&E, and Siemens, and is slated for 2016 completion.

### Residential Solar

In 2015, HSU students and Schatz Lab staff volunteered to install two residential solar arrays for tribal housing at the Rancheria. The solar panels generate approximately 75 percent of the residents' electrical need, and were obtained through the California Public Utility Commission's SASH (Single-family Affordable Solar Homes) program, facilitated by GRID Alternatives, the California program manager. The volunteers received training in solar installation, in part to serve as an introduction to the solar industry as a potential career.

### Biomass

A system slated to come online in 2015 that generates electricity to power a third of the casino's energy needs. It turns sawdust from locally-sourced timber into hydrogen gas, which is converted into electricity via a fuel cell.

### Electric Vehicle Charging Stations

Two dual-port electric vehicle charging stations installed in 2015 at the Blue Lake Rancheria Tribal Office that allow motorists to charge four vehicles simultaneously.

### Biodiesel

Developed in 2012, the system uses waste oil from the Tribe's commercial kitchens to power the Blue Lake Rancheria public bus system. It reduces greenhouse gas emissions by 80 tons and saves \$5,000 a year.



LEFT TO RIGHT: Level-Two electric vehicle charging stations. Redwood sawdust biomass fuel provided by Humboldt Redwood Company. The biomass system's flare, which burns waste fuel and converts it to carbon dioxide.

## More Hands-On Learning Opportunities

Academic departments across campus are working with the Rancheria to expand hands-on learning opportunities.

### Tribal Geography

Geography Professor Matthew Derrick's students have visited the Rancheria several times to research contemporary topics facing Native Americans such as tribal land use, and the establishment of reservations.

### Kinesiology Projects

Jason Ramos, a Kinesiology graduate who chairs the Blue Lake Tribal Gaming Commission and sits on HSU's Advancement

Foundation Board of Directors, created a \$25,000 endowment in the Kinesiology Lab to fund equipment and research.

### Learning Lab

Plans are underway to develop a hands-on learning lab, where local elementary, middle, and high school students can visit the casino and hotel to observe Schatz Lab projects and learn about careers in science, technology, engineering, and mathematics.



# WANTED

## ON THE HUNT FOR ELUSIVE WHITE-FOOTED VOLES

MAY BE TRAVELLING IN THE COMPANY OF BIGFOOT

By Dan Pambianco



**IN THE FORESTS** of Northern California, a mysterious animal lurks. Evidence of its existence is sparse and sightings are rare, but believers are convinced that it's out there.

The cryptic creature is the white-footed vole. For one loyal devotee—Humboldt State Wildlife Professor Tim Bean—the tiny rodent's local population could be an indicator of how animals adapt to climate change.

"When scientists think about how wildlife will change due to the climate changing, we believe that as the climate shifts north, the animals will have to move with it," Bean says. "I don't necessarily think that's true. As a researcher, what I'm most interested in is how an animal like this vole can adapt to various habitat characteristics."

Bean has been studying the white-footed vole's lifestyle since his arrival at Humboldt State in 2013. He and a team of students trapped three suspects in the summer of 2014, but even then, tests as to the trio's identity have been somewhat inconclusive.

"We took hair tufts and the DNA profile came back less clear than we hoped," Bean said. "About a third of the sequence suggested that they were maybe Sonoma tree voles, about a third of material suggested they were white-footed, and the final third didn't match either of them. Still, we're 99 percent sure they're white-footed voles."

That confidence comes from the white-footed vole's food preference. Unlike other voles, who are more likely to feast on Douglas fir, it prefers the leaves of red alder trees, usually found in old-growth forests.

"It was interesting watching one of the captured white-footed voles completely mow through red alder leaves," said David Tange (Wildlife, '14), who worked with Bean on the study as part of his senior project. "But then, it took a bite of wild ginger and immediately left."

After trapping the first three, Bean and his team were eager to capture more, and therefore access a larger sampling. While attending a conference, Bean heard a

presentation on a specialized canine unit, Working Dogs for Conservation, a group out of Montana that trains dogs to sniff out rare species.

Bean secured funding to bring the detection dogs to the North Coast, and after being trained on the scent in Montana, they were released into the field locally. The hunt was on.

"The dogs responded behaviorally the way trainers would expect them to if they had found what they're looking for," Bean said. "They would find a tree, and act excited, suggesting they were smelling something, but it was impossible to find the little vole poop under the layer of redwood duff."

Following a disappointing search, the trainers and dogs returned to Montana without having found a white-footed vole. Their unfulfilled effort, however, is consistent with past trends of now-you-see-them, now-you-don't.

Way back in 1899, a white-footed vole was spotted in the Arcata Bottoms, which to this date remains the southernmost sighting. Scientists didn't really look for them again until the mid-1990s, and an experiment in 1996 snared three between Patrick's Point and Big Lagoon. Ten years later, another round of trapping at the same places came up empty.

Another unsolved mystery is the rodent's dwelling. Most more-documented voles, including the closely-related red tree vole, live in the forest canopy, but there's evidence that its white-footed cousin is a ground denizen.

"Literally, I can show you research that says they're burrowing, and another paper that says they only live in the canopy," Bean said. "Then there's another that says they move back and forth between them."

It's that absence of firm knowledge that motivates both Bean and Tange, who has continued the trapping routine as part of his job as a scientific aide for the California Department of Fish & Wildlife.

"They're really rare, and that's awesome," Tange said. "It's interesting that their biology, their diet, and their behavior is so unknown."

"This species is so cool because we just don't know anything about it," Bean said. "Whenever I tell people how little we know about an animal living here in California, it is a shock. It means whatever we learn is something new."

Further strides toward solving the mysteries will only come if a larger population can be uncovered, Bean says. He still feels the dogs are among the best means to achieve that goal, and hopes they can visit again. In the long run, Bean believes he might be able to put to rest any doubt about the white-footed vole's existence.

"The hypotheses I support is that they're more plentiful than we've been able to show," Bean said. "Some evidence indicates they're more abundant, but they're just really hard to catch." 🐾



***"This species is so cool because we just don't know anything about it. Whenever I tell people how little we know about an animal living here in California, it is a shock. It means whatever we learn is something new."*** — WILDLIFE PROFESSOR TIM BEAN



**TOP:** Wildlife Professor Tim Bean holds a vial of white-footed vole scat used to provide scent for detection dogs. **BOTTOM:** Debbie Woollett, co-founder and a director for Working Dogs for Conservation, her dog, Wicket, and Scott Osborn, of the California Cooperative Fish & Wildlife Research Unit, on the search for white-footed voles at Patrick's Point State Park.



FOUR ALUMNI OF HUMBOLDT STATE UNIVERSITY were recognized with the 2015 Distinguished Alumni Award at the annual Honors Dinner in the spring. The recipients were: Lonny Grafman ('04 Physical Science and Mathematics), R.W. Hicks ('83 Political Science), Don Neubacher ('83 Resource Management), and Staci Self ('07 Kinesiology).

Along with being an alumnus with degrees in Physical Science and Mathematics, **Lonny Grafman** has been an instructor in the HSU Environmental Resources Engineering Department since 2003. He is known as an educator who combines strong values about sustainability with experiential learning. As part of his teaching, Grafman is director of Practivistas Dominicana, a study abroad program. Grafman is also founder and president of Appropedia, a collaborative website focusing on sustainable projects, and the CEO of Propulsion, a technology incubator in Humboldt County.

**R.W. Hicks** arrived at HSU as a student-athlete in 1971, and brought recognition to the University for his prowess as a center on the football team. He was an NCAA All-American, and eventually played professionally for a short time on teams including the Detroit Lions. He was eventually inducted into the HSU Athletic Hall of Fame. After his time in the NFL, Hicks returned to HSU and completed his degree in Political Science in 1983. A few years later, he became director of the Student Academic Services Outreach Program and the federal Talent Search TRIO Program. Hicks managed the programs for the next 20 years, helping thousands of sixth through 12th-grade students go to college. He also helped HSU increase enrollment of students who were disadvantaged.

**Don Neubacher** earned his master's degree in Resource Management from HSU in 1983, and has gone on to a highly successful, three-decade career with the National Park Service. He now holds one of most prestigious positions in the parks, serving as Superintendent of Yosemite National Park, which attracts more than 4 million visitors each year. Neubacher's first position with the National Parks was at Glacier Bay National Park in Alaska. Other roles have included serving as Deputy General Manager and Planning Director for the Presidio of San Francisco transition project. He was appointed Superintendent at Yosemite in 2010. In that role, he provides oversight of 1,100 employees and an \$80 million budget.

**Staci Self** earned her degree in Kinesiology in 2007. She was a star soccer player during her time at HSU, and quickly became an excellent handball player following graduation. She's now a member of the U.S. national women's handball team.

After graduating from HSU, Self went on to earn a master's degree in Physical Therapy from Cal State Long Beach. Soon after, she took a volunteer position for a non-profit organization called Operation Rainbow. Through that group, she travelled to Ecuador to provide children with free orthopedic care, helping some of them walk for the very first time. Today, Self is living and training with her teammates in Auburn, Alabama, and also working as a physical therapist.

# HUMBOLDT STATE Honors

HSU Honors Outstanding Alumni,  
Students and Faculty

THE DISTINGUISHED FACULTY AWARDS have been a campus tradition since 1964, when the University began honoring members of the faculty with the Outstanding Professor Award. This year, three individuals were chosen

as recipients of the 2014-15 Distinguished Faculty Award at Humboldt State University. They are: Professor Chris Hopper, Scholar of the Year; Professor Marlon Sherman, Outstanding Service Award; and Lecturer Gayle Olson-Raymer, Excellence in Teaching Award.

**Professor Chris Hopper**, Scholar of the Year award recipient, has been an effective and dedicated researcher and administrator for more than three decades. His research has focused on improving the health and wellness of children of all ages. To that end, Hopper has published dozens of peer-reviewed journal articles and won over \$11 million in grant funding. Through his work locally and with the National Institutes of Health and the U.S. Department of Education, Hopper has been able to reach diverse communities with his message of physical fitness.

**Professor Marlon Sherman**, recipient of the Outstanding Service Award, has made an impact well beyond his department. Faculty and students from a wide range of departments, including Sociology, Psychology, Child Development, Critical Race, Gender and Sexuality Studies, and English have benefited from Sherman's support and contributions. Many students credit Sherman for making a defining difference in their lives, and his service to campus can be felt in many ways, including his work supporting Indigenous Peoples Week.



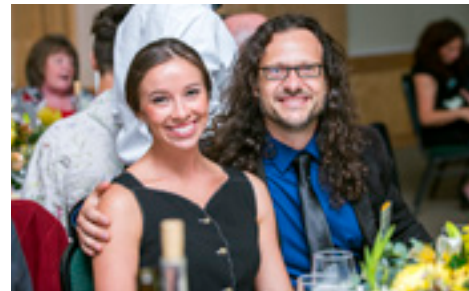
Distinguished Alumni Award recipients R.W. Hicks ('83 Political Science) and wife Maurya.



Don Neubacher ('83 Resource Management)



Staci Self ('07 Kinesiology)



Distinguished Alumni Award recipient Lonny Grafman ('04 Physical Science & Mathematics) and partner Ysabel Uribe.



Distinguished Faculty Award recipient Marlon Sherman (Native American Studies) and wife Dale Ann Sherman.



Distinguished Faculty Award recipient Gayle Olson-Raymer (History) and daughter Michaela Raymer.



Distinguished Faculty Award recipient Chris Hopper (Kinesiology & Recreation Administration) and wife Renee.



Outstanding Student of the Year winner Alyssa Haggard, flanked by Anthropology professors Marissa Ramsier, left, and Marisol Cortes-Rincon.




Outstanding Student of the Year winner Jacob Potter and HSU President Lisa Rossbacher.

**Lecturer Gayle Olson-Raymer**, recipient of the Excellence in Teaching Award for a Lecturer, has taught in both the History and Education departments for more than 20 years. Olson-Raymer is dedicated to her students, and her work with teachers through HSU's education and credential programs ensures future students will benefit from her commitment to teaching. Olson-Raymer has worked tirelessly with local teachers, statewide initiatives, and national organizations to advance the teaching of history in all levels of education. Her dedication to education has had a positive impact on the quality of teaching in California.

THIS PAST SPRING, two seniors were recognized as Outstanding Students of the Year for their co-curricular contributions.

With a 3.81 GPA, **Alyssa Haggard** received A's (and top scores) in all 21 upper division anthropology courses she took since Fall 2012. She was the only student to become lab coordinator in the Archaeology Research Lab and senior research assistant at the Biological Anthropology Lab at

HSU. Haggard also earned the title of lead curator for her work procuring, processing, and curating departmental zooarcheological specimens. She has volunteered as a course assistant for eight classes and has tutored students before exams. Beyond HSU, she has worked on archeological projects in Belize and Poland, and was asked to return to both due to her exceptional work ethic, professionalism, and skill.

**Jacob Potter** has maintained a 3.8 GPA and was honored as a Presidential Scholar. He was also a member of the HSU cross-country and track and field teams, a volunteer for Youth Educational Services (Y.E.S.)—an organization of student-run community service programs—and worked with the Leadership Educational Adventure Program (L.E.A.P.) to help youth experience outdoor adventures. He eventually became a L.E.A.P. co-director, taking on everything from volunteer recruitment, screening and training to implementing weekly meetings and service events. He also volunteered as a Wilderness Patroller, and became a member of Alternative Spring Break (ASB), which spent last year's break in San Francisco at various organizations that serve the homeless. 



# Class Notes

*Submit a Class Note*

humboldt.edu/classnotes or email: alumni@humboldt.edu

## 1950s

**JOHN VORIS, 1955 Wildlife**, died on March 19, 2015. He received a master’s degree in Wildlife Management from Iowa State University in 1957. Voris’s first job was with Nicholas Turkey Breeding Farms in Sonoma, Calif., where he was employed for 25 years. In 1982, he joined the staff of the Animal Science Department at UC Davis as a Turkey Specialist. He provided research-based consultation to San Joaquin Valley turkey growers, and published papers in academic journals on land-use disputes, agricultural nuisance complaints, and turkey care practices. The poultry facility guidelines Voris developed with the industry were the basis for an ordinance in Fresno County and are used as guidelines in four other counties in the area.

**LARRY FLAMMER, 1956 Zoology**, taught high school biology in San Jose for 38 years, and retired in 1997. In retirement, he created ENSIweb, a website for teachers, with interactive lessons that teach critical aspects of the nature of science and evolution. He has also published a unique student e-text: *Science Surprises: Exploring the Nature of Science*, which integrates several of the “*Nature of Science*” lessons on the ENSI site.

**JOYCE (NÉE VAN ALEN) LOMBARD, 1957 Art & Education**, just completed a 30-year career as a Licensed Marriage and Family Therapist in private practice. She continues as a provider of continuing education units for Marriage and Family Therapists and Licensed Clinical Social Workers. The focus of her career was on the fields of illness, grief, and loss. Also an artist and writer, Lombard exhibits and is published, most recently in the anthology *Home* by Holy Cow! Press, and an essay in *The Disenfranchised: Stories of Life and Grief*



*When as Ex-Spouse Dies*. She and her husband, Ted, live in Southern California where they volunteer for arts organizations and enjoying biking, last year in Holland and Belgium; this year in France. Lombard says her education in art at Humboldt is the bedrock of her life. She would love to hear from those with whom she shared her Humboldt years. Lombard can be contacted through the HSU Alumni & Engagement Office, at mailto:forever@humboldt.edu.

## 1960s

**BRUCE EDWIN DEUEL, 1967 Wildlife**, retired from the California Department of Fish and Wildlife in October 2007 after more than 34 years. Since then, Deuel and his wife, Kathy, have traveled to every continent chasing new birds, and spent a lot of time enjoying their nine grandchildren.

**BOB NISBET, 1965 Forest Management**, earned a M.S. in Biology from San Diego State University in 1969 followed by a Ph.D. in Ecology from Arizona State University in 1972. Following his education, Nisbet taught Botany and Ecology at Malone University in Canton, Ohio. Nisbet moved to Santa Barbara, Calif., in 1979 to manage the Vegetation Studies and the Landsat Vegetation Analysis program on the MX-Missile environmental impact statement for the U.S. Air Force. Nisbet moved back into academia at the UC Santa Barbara in 1987 to model forest growth under projected global warming conditions over the next 90 years. In 1994, he moved back into business to build a predictive analytics team for data mining at AT&T. Nisbet built data mining models in various industries by adapting biological analysis methodologies to model customer behavior in business ecosystems. He retired in 2009, but keeps active with writing. He has published three

books with Academic Press and is working on a fourth on the subject of effective data preparation, to be published by Cambridge University Press. Two of Nisbet’s books have won the Prose Award from the Association of American Publishers. He teaches online courses at UC Irvine in the Predictive Analytics Certification Program.

**JANICE WIEMAN PARKER, 1967 English**, became active in her local land trust after retiring from her third career. Parker was interested in setting aside what little open space was still available in her town. Parker writes that, “the skills I received at Humboldt in writing and public speaking, have become my greatest assets as the president of Common Ground Land Trust. The environment was not my major in college, but it is now.”

## 1970s

**MICHAEL O. GARCIA, 1971 Geology**, was recently elected as a fellow of the American Geophysical Union. Garcia earned his Ph.D. in Geology from UCLA in 1976. He is currently Professor of Geology in the University of Hawaii’s Dept. of Geology and Geophysics.

**ANN SIMAS, 1971 Special Major**, recently released her latest book, *Holy Smoke*, the first book in her Andi Comstock Supernatural Mystery series. Simas served for two years on the Romance Writers of America’s Board of Directors, chairing the Outreach Chapter, and co-founded a local RWA chapter. Her other published titles include *Chloe’s Spirit Afterstories*, *Second Chance*, and *Foolish Heart*. She is currently working on *Heaven Sent*, a book about a near-death experience.



SUBMITTED

## Mike Garcia Digging Deep into Volcanic Hotspots

**LOOKING FOR ADVENTURE**, and a constantly changing landscape, Mike Garcia (’71 Geology) landed in one of the liveliest places on the planet. Thirty-nine years later, the University of Hawaii professor is still adding to the field of volcanology, much like flowing molten rock continuously adds to the Big Island landmass. Garcia arrived in the Hawaiian Islands—one of the most active volcanic hotspots on the planet—after earning a doctorate from UCLA in 1976. His interest in geology, however, began as an undergraduate at Humboldt State. “I came to HSU to study oceanography, but I had to take some geology courses as part of that major,” Garcia says. “Frank Kilmer was one of the professors who would pile us into his vehicle, and take us out to look at local geology.” Those and other geology field trips led to Garcia’s senior thesis on mantle rocks along the Smith River in northernmost California.

Evidence of ancient volcanic arc islands that eventually became the Klamath Mountains encouraged him to do his dissertation research on the rocks of Oregon’s Rogue River Valley. Two field seasons in Antarctica—home to active volcano Mt. Erubus—have also proved valuable to Garcia’s research. But it’s the easy access to Big Island volcanoes Kilauea, Mauna Loa, and submarine Lo`ihi, that has provided him further research and teaching opportunities. “We go out on field trips where undergraduate students can actually scoop up molten lava,” Garcia says. “They wear heavy gloves, heavy boots, and actually scoop it up.” Sharing that hands-on experience with other students and professors without those resources has led Garcia to the development of several training modules that can be included in the curriculum at other universities.



# Clover Codd

## Academic Rising Star

**CLOVER CODD** ('97 Sociology) was close to completing her undergraduate education, and it was time to think about the next step. She had vague ideas about possible career paths, but it wasn't until she stumbled upon an education class in her final semester that her future began to take shape.



SUBMITTED

"It was a class that introduced students to teaching to generate interest in the field," Codd says. "It left an impression on me."

She went on to become an elementary school teacher, but moved quickly up the ladder in the Seattle Public School system. Codd has left her own impression on the Seattle Public School system since first taking a job teaching elementary education. As the newly-hired Chief Partnership Officer, she's now responsible for building better relationships between administrators, families, teachers, unions and others involved with 97 schools filled with 57,000 students in the greater Seattle area. One of

Codd's first initiatives is fostering communication between all parties.

"Helping lead that work is something that fits well within my skills," Codd says. "Seattle has a diverse public school system, and not everybody feels they're being heard. One of my primary goals is to bring the community's voice to the table."

Codd's career in education has been on a fast track, partly because of her ability to balance a full-time job as principal at Loyal Heights Elementary School in Seattle while completing her doctorate at Teacher's College, Columbia University. It meant flying to New York monthly for an intensive two-day component.

"I've lived my life in dog years," says Codd, who is 41. "I was a principal by the time I was 28, and I feel like I have a lot more in experience than my age might indicate."

While still teaching, Codd completed her master's degree in education at the University of Washington. Following her years as a principal, she continued to move up the ranks, taking over as the district's Executive Director of Strategic Planning and Partnerships in 2013. When the Chief Partnership Officer position opened, she was immediately intrigued.

"I've always been quite ambitious," says Codd, who also completed a minor in Native American Studies at HSU. "When I was 4 years old, I was already saying I wanted to be a civil rights attorney when I grew up. My career has led me into education, which is actually a big civil rights issue of our time."

**PAUL ANDRE DEGEORGES, 1973 Natural Resource Management**, has lived a life of adventure, as a Peace Corps Volunteer studying the ecology of El Salvadorian lakes, living among the Cajuns in the Louisiana swamps, serving as an advisor to the U.S. in both Africa and the Caribbean, as well as to African governments, and teaching at and running a scholarship program for students from all over Africa to study nature conservation (wildlife management) at Tshwane University in South Africa. DeGeorges has co-authored two books for Academic Press, A critical evaluation of conservation and development in *Sub-Saharan Africa: Last Chance Africa*, and *The Development of Taliban Factions in Afghanistan and Pakistan: A Geographical Account*.

**DEB (LEWIS) PARKER, 1976 Wildlife Management**, retired from the federal government in 2014 after a 36-year career. She still works full time as a senior staff assistant with the nonprofit National Conference of State Legislatures in Denver. Parker started her career as a rodent-control biologist with the Peace Corps in Niger, West Africa. She then spent 24 years with the U.S. Forest Service as a Wildlife Biologist and Public Affairs Specialist working in Oregon, Washington, Arizona, and Colorado. For the next 10 years, Parker worked for the U.S. Fish and Wildlife Service in Colorado, where she was the writer, editor, and web manager for National Wildlife Refuge conservation plans in the service's Mountain-Prairie Region. Parker and her husband, Andy (a retired wildland firefighter), adopted their daughter, Tai, from China in 1994. Tai is currently a junior at HSU, with double majors in psychology and CRGS (Critical Race, Gender & Sexuality Studies). Parker's weekends often involve competing in dog agility trials with her feisty terrier, Jagger.

## 1980s

**VIRGINIA HOWARD MULLAN, 1980 Anthropology**, retired with a fabulous retirement party at the Arcata Theater Lounge after 30 years of teaching all subjects in a multigrade classroom at Bridgeville Elementary. Mullan is currently working at College of the Redwoods training foster

and kindercare guardians, while also volunteering and substitute teaching at Cuddeback School in Carlotta, Calif. She is still writing and is currently working on publishing a vignette about Julia Park Howard. This year, Mullan had the chance to see many of her friends who are HSU alumni, including: Suzanne Stone Gorter, Jim Gorter, Sherry Sweeney, Jody Stevens Vandenburg, Marty Casillas, John Bennett, Bob Fiock, Dave Ward, and Ralph Martinez.

**JEFF C. STEVENSON, 1981 Journalism**, recently published his first book. *Fortney Road: Life, Death and Deception in a Christian Cult* is the true story of the religious group, the All Saved Freak Band.

**MARK S. FESLER, 1984 Chemistry**, worked for more than 25 years as an analytical chemist. For the last eight years,

### Alumni Correspondence

Sent in by Peter D. Bromirski, Ph.D. ('88 Natural Resources)

Three 1980s Humboldt State alumni recently had a reunion at McMurdo Station, Antarctica.

All are involved in NSF Polar Programs sponsored research projects.

Dean and Tim are PASSCAL seismic instrumentation experts, while Peter leads a team deploying broadband seismic stations on the Ross Ice Shelf to measure the "Response of the Ross Ice Shelf to Gravity Wave-induced Vibrations."

The project webpage (Google "iceshelfvibes") describes ocean wave impacts on ice shelves and their potential influence on sea level rise.

Of interest is that some of waves that impact the Ross Ice Shelf come from coastal regions of North America that include the Humboldt coast.

Regards,  
Peter



**PICTURED: Flags of nations with a presence in Antarctica in front of the National**

**Science Foundation (NSF) chalet, with hut hill in the background. FROM LEFT: Dean Childs, Peter Bromirski, Tim Parker.**



SUBMITTED

# Mike Radenbaugh

## The Next Big Thing in Electric Transportation

**ANY VENTURE INVOLVING MIKE RADENBAUGH** ('11 Industrial Technology) has two basic requirements: 1) It has to involve electric energy, and, 2) it has to be fun.

Well before graduating with honors from Humboldt State, Radenbaugh incorporated those elements in his pursuit of energy efficient transportation. He's turned that interest into a lucrative career that has led to mass production of one of his creations—the GolfBoard—and growing interest in several others.

"Growing up in rural Humboldt County, 16 miles from high school, bus service was intermittent at best," Radenbaugh said. "I started looking into electric bicycle technology, which at the time was very limited. The first bike I built was terrible, with exposed wiring, heavy lead acid batteries, and a motor that stuttered when accelerating. Each time I built a bike it improved in range, performance, and aesthetics."

During his undergraduate years at HSU, he continued that pursuit of electric-based propulsion. Since leaving college, he's co-founded and is the co-owner of three companies—Rad Power Bikes (producing electric-powered bicycles), Current Drives (electric paddleboard manufacturers), and GolfBoard (a golf cart alternative).

One of the most popular transportation devices springing from Radenbaugh's high-voltage mind is GolfBoard's namesake product, an electric-powered alternative to a golf cart. The transporter, which resembles a skateboard, includes a golf bag holder and stability bar, and enables riders to cruise the golf course smoothly and quickly.

"While I was working on my master's degree at UC Davis, two friends and I were building custom high performance electric mountain boards for riding the trails in Humboldt," Radenbaugh says. "We made a connection with professional surfer Laird Hamilton and Bally Total Fitness founder Don Wildman. I took on the product-development responsibilities, and together, we founded GolfBoard."





# Lumberjack Red and White

Humboldt County's Stargazer Barn winery has introduced two new wines that will help support the university.

Lumberjack Red and Lumberjack White are special, limited production blends made entirely of Humboldt-grown grapes. The wines were introduced in April, and are now available at Wildberries in Arcata and online.

A portion of every bottle sold will go to the Humboldt Loyalty Fund, which supports the student experience at HSU with laboratory equipment, new technology, special projects, and more.

**stargazerbarn.com**

Fesler has worked as an environmental scientist and consultant with the engineering company CH2M Hill.

**SHERI FORBES, 1985 Natural Resources Planning & Interpretation and 1990 Environmental Education**, has worked at several beautiful and inspiring places, most recently Glacier National Park in Montana and Mount Rainier National Park in Washington. As Chief of Interpretation and Education for the Pacific West Region of the National Park Service (NPS), Forbes currently provides leadership for interpretation, education, and volunteer programs at NPS sites in six western states.

**MEG GODLEWSKI, 1987 Journalism**, has combined journalism talent with a passion for aviation. She is celebrating 16 years as the staff reporter for *General Aviation News*, a national magazine. Godlewski also supplies the "Ask the CFI" column for *Aviation for Women* magazine, an international organization. Godlewski is a frequent contributor to aviation textbooks, combining humor with science, and technique. Godlewski is anticipating the publication of her first fiction novel, if she can work the edits and rewrite around a busy flying schedule.

## 1990s

**GILLIAN WEGENER, 1990 English**, is the founding president of the Modesto-Stanislaus Poetry Center. Wegener is currently the Poet Laureate of the city of Modesto. Her work in bringing poetry to the wider community led the Stanislaus County Commission for Women to honor her as one of 10 Outstanding Women of Stanislaus County for 2015. Her second book of poetry, *This Sweet Haphazard*, will be published by Sixteen Rivers Press in spring 2017. Wegener lives with her husband and daughter in Modesto, Calif.

**KATRINA "KATI" S. HAGEN RADLICK, 1994 Politics and French**, was appointed by Gov. Brown as the Chief Deputy Director of Operations at the state Dept. of Human Resources in March. Prior to this appointment, Radlick served as the Chief of Human Resources at CalPERS, the

California Public Employee Retirement System. She is also an Adjunct Faculty member at the University of San Francisco teaching Human Resource Administration.

**JOSHUA MARTIN (FORMERLY KNOWN AS JOSHUA ROBERTS), 1998 English and History**, worked at the Hotel Arcata for about a year after graduating. Martin then entered law school at the University of Utah, accompanied by his then-girlfriend, Bonnie Jo McLauchlan (also an HSU graduate). Martin made law review, graduated, and practiced criminal defense in Salt Lake City. He later moved on to civil litigation. In 2007 Martin moved to San Luis Obispo County and opened the Law Offices of Joshua W. Martin in 2013. Martin married Bonnie Jo and the couple lives in Grover Beach, Calif., with their two boys, Max, 10, and Charlie, 5, and their dog, Scooby.

## 2000s

**JUSTIN BYRNE, 2000 Social Sciences**, has been based in San Diego, working in medical publishing since 2003. From 2007 to 2013, he served as the managing editor of the Journal of the American College of Cardiology's two specialty journals, *JACC: Cardiovascular Imaging* and *JACC: Cardiovascular Interventions*. Since 2013, he has been the managing editor of the *Journal of Allergy and Clinical Immunology*. Byrne married Alicia Jack ('00 Journalism) in 2004. They live in San Marcos, Calif., and have two children, Declan and Clara, born in 2006 and 2008, respectively.

**KENNETH DAVIS, 2001 Film Production**, founded ProCuts Editing Services, a postproduction firm in the Baltimore/Washington area in 2002 after earning a master's degree in film production. The firm provides services to videographers, corporate and government clients, independent filmmakers, and media enthusiasts. Davis remains active with SCUBA and adores his new niece, Krista.

**EVAN LAUTZENHEISER, 2003 Wildlife**, worked for Green Diamond as a wildlife technician conducting spotted owl surveys after graduating. Lautzenheiser

# Adam Creighton

## Bringing Stoves to Those Who Need Them

**ADAM CREIGHTON** ('06 Journalism, '08 Teaching Credential) knows a thing or two about living the HSU Graduation Pledge of Social and Environmental Responsibility.

He carried the pledge in his wallet after graduation. And now, he embodies its message every day through his work with InStove, a hybrid social venture that builds clean cookstoves for hospitals, orphanages, schools, and refugee camps in the world's least developed countries.

"Every time I place a stove—whether it's in an elementary school in Haiti or a Kenyan refugee camp—I know it's making a huge difference to women, children, and the environment," says Creighton, who's CEO of InStove Manufacturing LTD, the for-profit arm of InStove, which builds the technology the nonprofit places.

According to the Global Alliance for Clean Cookstoves, InStove makes the cleanest, most efficient biomass cookstove on the market today.

The Oregon-based organization primarily serves sub-Saharan Africa, where wood is the main source of energy for over 650 million people. Each stove is highly effective—75 to 90 percent more efficient than an open fire—and saves 14 lumber trucks of wood from being burned each year. The stoves can provide hot meals for up to 180 people, and can be used to sterilize medical supplies and purify water.

In the least developed countries, clean cookstoves protect women's lungs from smoke, their skin from burns, and their eyes from macular degeneration and cataracts. They also provide them with ways to generate income, and to spend more time with their families and less time gathering wood: a task that can expose them to gender-based violence, abduction, and murder, Creighton says.

At InStove, Creighton started as a volunteer at the nonprofit and quickly moved up the ranks to development director. In 2014, he founded the for-profit and became its CEO. He credits HSU for providing him with the skills to succeed.

"My journalism degree taught me how to write concise, clear copy for any media, and the teaching credential program gave me the poise and confidence to speak in front of large groups," Creighton says. Recently, he represented InStove at two business pitch competitions in Oregon, and won awards at both.

"HSU is definitely the best decision I made educationally," he says. "You can learn the facts anywhere, but what sets Humboldt State apart is that it has a great set of values that continue to inspire me today."



SUBMITTED



also completed a short stay in Palm Springs, Calif., working with desert bighorn sheep. In 2007, he was hired by Arizona Game and Fish as a district wildlife manager/game ranger.

**KATE MCLAUGHLIN, 2009 Natural Resources**, recently became an Environmental Scientist for the California Department of Fish and Wildlife in Santa Barbara. McLaughlin is working with steelhead trout—the species she studied for her HSU master’s degree. McLaughlin enjoys connecting with HSU alumni who work for and collaborate with the Department of Fish and Wildlife.

**MARSHALL R. LIGARE, 2009 Chemistry**, finished his Ph.D. at UC Santa Barbara and is starting a postdoctoral research position at the Pacific Northwest National Laboratory.

## 2010s

**JESSICA PETERS, 2010 Anthropology**, interned at the American Embassy in Paris. While there, Peters was accepted into UCLA’s Anthropology Ph.D. program, and received her M.A. in Sociocultural Anthropology in 2012 and her Ph.D. in Sociocultural Anthropology in 2015. During this time, Peters also presented research at the AAAs and at the Interdisciplinary Conference in the Humanities (organized by the University of West Georgia).

**MAX BRUNSFELD, 2011 Physics and Astronomy**, moved to Oakland after graduating from HSU and worked as a software engineer in San Francisco for three years. Brunsfeld recently started working for GitHub, a company that makes tools for collaborative software development, and whose employees are distributed all over the world. Brunsfeld has since moved back to Arcata to raise a family.

**KELLY JEAN MUTH, 2012 Geography**, has been pursuing her goal of becoming a professional disc golfer. After graduating from HSU, where she participated in the Humboldt State Disc

## Submit a Class Note

**humboldt.edu/classnotes**  
or email:  
**alumni@humboldt.edu**

Golf Club, Muth has participated in several national competitions, and has been ranked No. 26 in the world by the Professional Disc Golf Association.

**JARED BIRNBAUM, 2014 International Studies**, is enrolled in a master’s program at Fresno State University. Birnbaum plans to finish with a master’s degree in Communication and Linguistics, and also be certified in Teaching English as a Foreign Language and Teaching English to Speakers of Other Languages (TEFL/TESOL).

**MARY LOCHER, 2012 English and 2014 Education**, earned her SB2042 teaching credential and worked as a substitute teacher. In April, Locher joined HSU’s Sponsored Programs Foundation as an academic advisor in the Gaining Early Awareness and Readiness for Undergraduate Program (GEAR UP).

**HOLLY BENNETT, 2013 Biology**, was accepted to Midwestern University’s College of Dental Medicine in Chicago, with an expected graduation date of 2018. After graduating from Humboldt, Bennett, along with her sister and mother, celebrated with a trip to Ireland, Wales, England, and Scotland.

**ANTONIO LUEVANO, 2013 Religious Studies**, is working on his Master of Divinity at the Franciscan School of Theology.

**WILLIAM GOLDENBERG, 2013 Wildlife**, completed a Master of Arts degree in Wildlife Filmmaking with the BBC Natural History Unit at the University of the West

of England. Since then, Goldenberg has worked as a freelance cinematographer for television shows, including “David Attenborough’s Natural Curiosities,” and now operates a media production and consulting firm based in Arcata.

**ANNA NEUMANN, 2013 Oceanography**, was appointed to the position of Northern California Regional Manager for Reef Check in 2014. Neumann combined her love for the ocean and education by earning a Bachelor of Science degree in Oceanography, with an emphasis in Scientific Diving. While attending Humboldt State, she founded the HSU Marine Debris Program and received her National Association of Underwater Instructors Dive Master certification. She spent her summers interning for Blue Ocean Society for Marine Conservation and the University of Victoria’s Whale Research Lab, identifying humpback, finback, and grey whales. After graduating she moved to Cozumel, Mexico, and became a Professional Association of Diving Instructors-certified dive instructor. She currently resides in Fort Bragg, Calif.

**JESSICA TAATJES, 2014 Oceanography**, joined AmeriCorps VISTA with the California State University after graduation. Taatjes currently works with COAST (Council on Ocean Affairs, Science & Technology), conducting student engagement across the CSU.

**EVERARDO CUEVAS, 2014 English**, has been accepted into the master’s program in Critical Studies in Literacy and Pedagogy at Michigan State University. Additionally, he was awarded an Academic Achievement Graduate Assistantship (AAGA) from the College of Arts & Letters at MSU. This assistantship, which recognizes leadership potential and is offered to only two percent of graduate assistants, will provide two years of full funding toward the master’s degree.

**CHLOE ELLIOTT, 2015 English**, was accepted to the CSU Monterey Bay Single Subject Credential program for the 2015-2016 school year.

# Calendar

## MARK YOUR

### Homecoming & Family Weekend

**Homecoming Parade**  
Oct. 9 | 4:15 p.m.

Arcata Plaza



**Tailgate Party**  
Oct. 10 | 3 p.m.

Parking Lot G11  
(Across from SBS Building)



**Football vs. Azusa Pacific University**  
Oct. 10 | 6 p.m.

Redwood Bowl

**humboldt.edu/homecoming**

### HSU Jacks Season Highlights

**Volleyball vs. Cal State Bernardino**  
Oct. 3 | 7 p.m.

Lumberjack Arena



**Women’s Basketball vs. Sonoma State**  
Dec. 11 | 5:30 p.m.

Lumberjack Arena



**Men’s Basketball vs. Chico State**  
Jan. 7 | 7:30 p.m.

Lumberjack Arena

**hsujacks.com**



### Big Gigantic

Oct. 11 | 8 p.m.

West Gym

### Indigenous Peoples Week

Oct. 12-16 | Times Vary

HSU Campus



### “Kiss Me Kate”

Oct. 16-17, 22-25  
Times Vary

Van Duzer Theatre



### Campus Dialogue on Race

Nov. 2-6 | Times Vary

HSU Campus

### Faculty Artist Series: Cindy Moyer, Violin, and John Chernoff, Piano

Nov. 8 | 8 p.m.

Fulkerson Recital Hall



### StarTalk Live! Featuring Bill Nye The Science Guy

Nov. 7 | 8 p.m.

Van Duzer Theatre



**humboldt.edu/events**

Tickets to most events are available at the **HSU Ticket Office** by calling **707-826-3928**

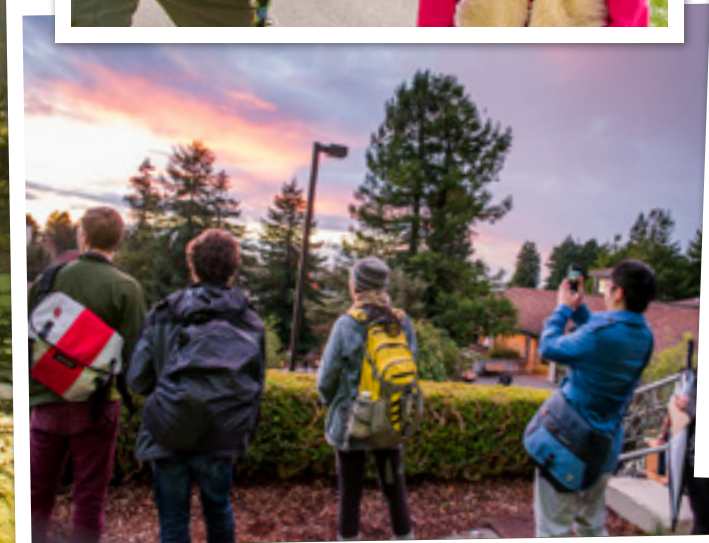
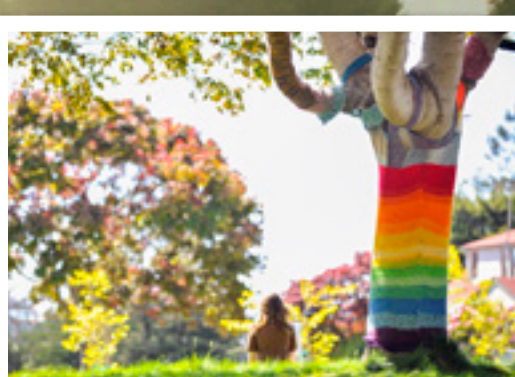




things



Dreamy fog.  
Compost in a  
compostable pot.  
Yarn-bombed tree.  
These are some  
of the things that  
make Humboldt,  
well, Humboldt.



## meet humboldt

### Ivan Soto ('16 Environmental Studies)

**IVAN SOTO** is co-director of the Campus Center for Appropriate Technology (CCAT) and media coordinator for the Natural Resources Club. He grew up in Imperial Valley, Calif., and enjoys getting involved in causes he cares about, both on- and off-campus.

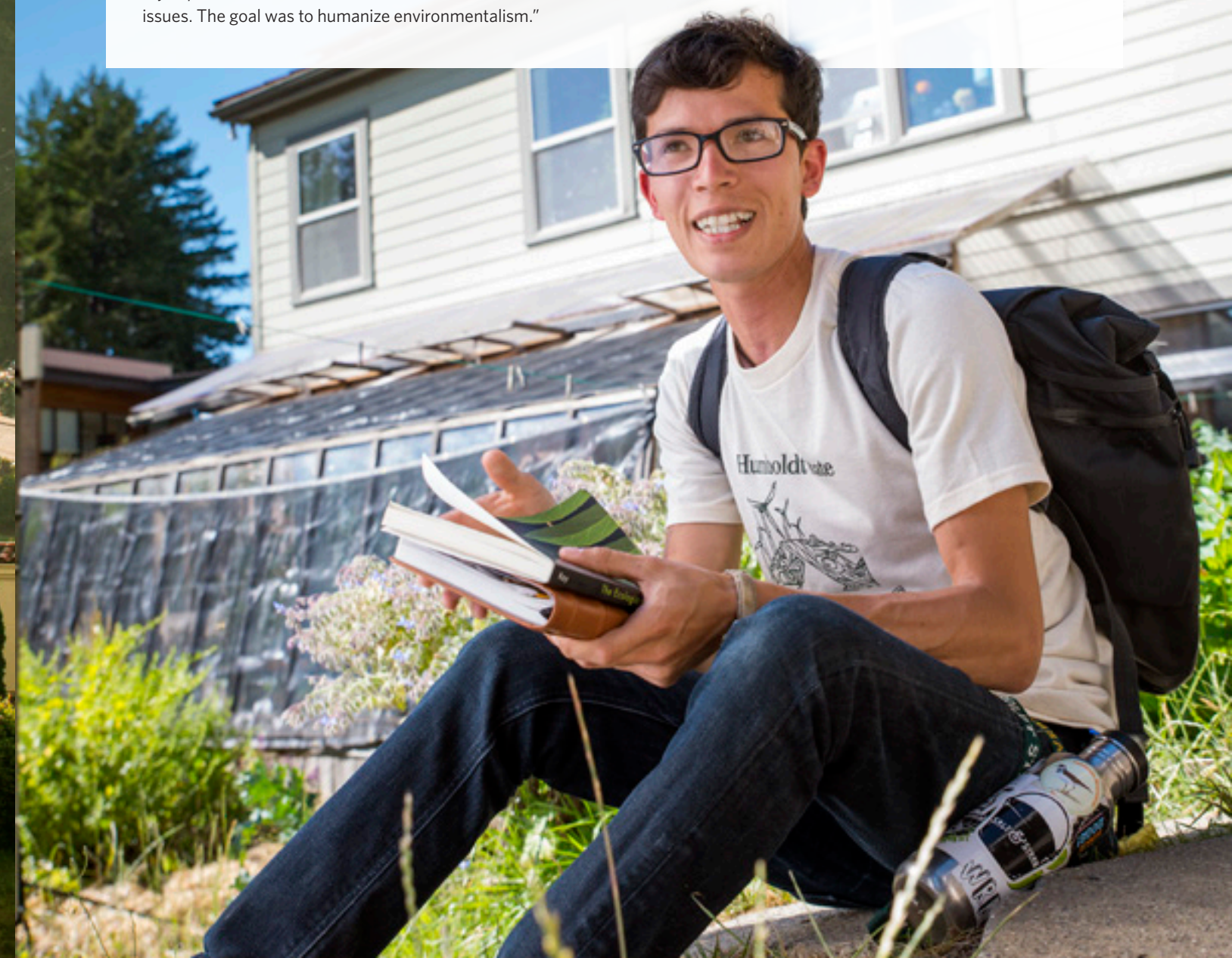
**ENVIRONMENTAL JUSTICE** "When most people think of studying the environment, they think of the natural sciences. But Environmental Studies is much more than that. It looks at social justice and how the environment ties into health disparities, race, class, and gender. It looks at where people live and how it affects their quality of life, health, and access to resources."

**MOSCOW OR BUST** "I just got a research grant through the College of Arts, Humanities & Social Sciences to travel to Moscow, Idaho. I went to a conference that focused on the humanitarian aspects of environmentalism and I talked about my experiences as a Latino student involved in environmental issues. The goal was to humanize environmentalism."

**EXTREME YOGA** "In my free time, I do acro yoga on campus. It's a combination of acrobatics and yoga where you and a partner balance each other in various poses with your legs. I take myself a little too seriously sometimes and it's a great way to have fun."

**FRIEND OF THE MARSH** "I grew up around the Salton Sea in California, where a lot of agricultural runoff is cleaned up by human-made wetlands. When I heard HSU professors were doing the same thing at the Arcata Marsh, I got excited. The marsh ended up being one of the first places I went to when I moved here. I love birding, and now, I'm on their board of directors."

**MAKING CONNECTIONS** "When I first came here, I showed up at CCAT Volunteer Fridays. There were a bunch of amazing and really inspiring projects that were all student-created. I remember feeling welcome, in the sense that I felt connected with the work the students were already doing. The best thing about CCAT is making connections, not just with students but other campuses and organizations that are working toward similar goals."





# Charitable Gift Annuities

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60	4.5%	\$1,100
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80	6.8%	\$1,700
90	9.0%	\$2,250

Minimum gift is \$5,000

Contact us for two-life or couples' gift annuity rates, and for an illustration specifically tailored to your circumstances and goals.

*This information is not provided as legal advice—seek counsel from your attorney and financial advisor.*

**[humboldt.edu/giftplanning](https://humboldt.edu/giftplanning)**

Contact us: **[giving@humboldt.edu](mailto:giving@humboldt.edu)** or **707-826-5101**