

UC SANTA CRUZ

REVIEW

FALL 2013

GIVE



DON'T GIVE IN

THE CAMPAIGN ISSUE

WELCOME TO THE CAMPAIGN FOR UC SANTA CRUZ!

This issue of *Review* details the beginning of an exciting new chapter for UCSC. The Campaign for UC Santa Cruz is a comprehensive, multi-year effort aimed at raising a substantial amount of capital—\$300 million—in support of this extraordinary university and its students.

With this issue, we announce this ambitious project to the world.

We are ready for this step. In an era of risk aversion and budget challenges, UCSC is reaching out to its alumni, friends, and the broader community to support its founding mission of progressive, bold, fearless inquiry that benefits both the individual and the planet. We will never give in.

It's our moment to shine.



CAMPAIGN VOLUNTEER LEADERSHIP

The UC Santa Cruz Foundation

The UC Santa Cruz Foundation is a key partner with the chancellor and campus leaders in The Campaign for UC Santa Cruz. Founded in 1974, the foundation is a nonprofit organization dedicated to supporting the university and increasing private resources. The 36 members of the board include alumni and non-alumni in the business, civic, and cultural sectors that share a commitment to advancing UCSC's goals and its impact on the world.

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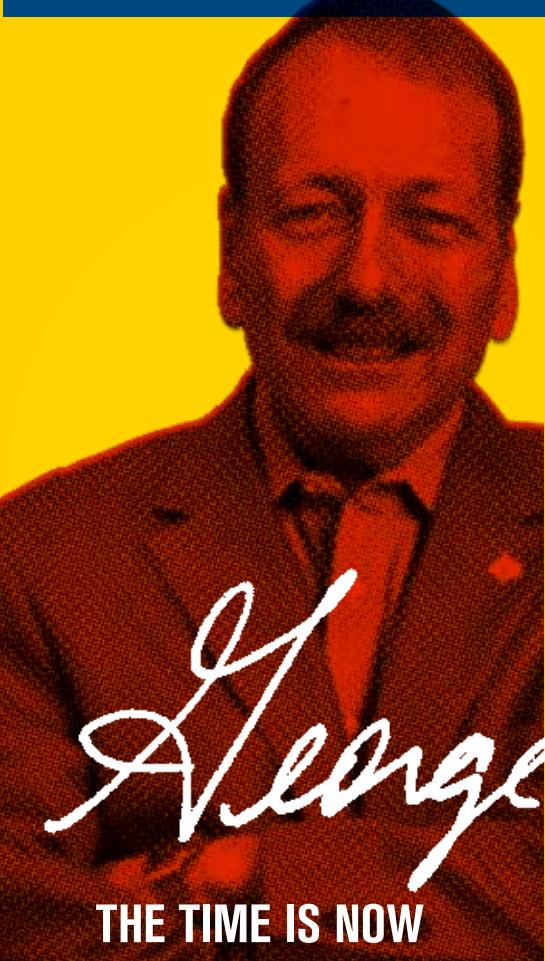
Lewis Feldman ('78)

Michael Graydon ('70)

Paul Hall ('72)



UC SANTA CRUZ



The campaign is an opportunity for all of us to invest in this extraordinary place—to invest in what matters.

This is a pivotal moment for UC Santa Cruz. This month—October 2013—UCSC is launching publicly its first comprehensive campaign and charting a new course for the future.

Already, inspired donors have contributed \$146 million toward our campaign goal of \$300 million—funds that support even more groundbreaking faculty research, improved campus facilities, and achievement for today's students and tomorrow's.

This campaign is making UCSC stronger than ever, energizing it with new partnerships and bringing it new resources. It is an opportunity for all of us to invest in this extraordinary place—to invest in what matters.

UCSC has almost reached the half-century mark, but we're not looking backward—we're charging ahead. We have great ambitions. Philanthropic support will launch us into this bright future.

We are raising money for the things that make UC Santa Cruz great: The experiences that prepare our students for life and

leadership, and the high-impact research our faculty is doing that is changing the world. We are ready for our next step, and we invite you to take it with us.

We walk this path holding fast to the values of social responsibility and environmental stewardship that are at the core of UCSC's being. We will stand for the right things and ask tough questions of ourselves and of others.

The campus's commitment to its students is its No. 1 priority. An undergraduate degree from UCSC must always mean something delightfully and intrinsically different than a degree from anywhere else.

From its beginnings, UCSC has delivered progressive, bold, fearless inquiry that benefits individuals and the planet. That difference leads UCSC students to outdoor and real-world learning, to questioning the accepted ways of thinking, to challenging and rigorous instruction that prepares them for fulfilling, meaningful careers and lives. UCSC alumni have walked in space, advised presidents, written award-winning news

and fiction, and fought for the common good, among many other accomplishments.

In this issue of *Review*, you will learn more about the campaign initiatives that position us to leave our mark on the world.

Importantly, this campaign is comprehensive—meaning it will support research and student projects all across campus, in our academic divisions and in the colleges. It highlights our long-standing drive to honor excellence and promote accessibility through scholarships and fellowships.

This fundraising campaign is about changing lives. That's what education does. That's what research does.

We want to change more lives. We want the world to know about this special place, this spirited experiment.

We are shouting it from the rooftops now. Join us!

A MOMENT OF TRUTH

Approaching age 50, UC Santa Cruz seized its future with three bold decisions:

It charted an ambitious course to accelerate the impact of its excellence.

It challenged alumni, friends, and the community to become stronger partners.

And it embraced the things that make it such a powerful force for change in the world—its fearless questioning of the status quo in pursuit of the greater good.

The result is The Campaign for UC Santa Cruz—GIVE, Don't Give In—the university's first comprehensive fundraising campaign. In support of a strategic vision for UCSC's future, the \$300 million campaign is publicly launching with \$146 million already contributed through strong support from alumni and friends.

"We were founded on a promise to the people of California to use our unique educational experience and world-class research to develop the big ideas, to question, to be bold in seeking solutions," says UCSC Chancellor George Blumenthal. **"This campaign is about fulfilling that promise."**

The campaign builds on core strengths of the university: an extraordinary undergraduate experience, high-impact research, and commitment to environmental and social responsibility.

"The time is right for UC Santa Cruz to take things to the next level," says Paul Hall (Merrill '72), president of the UC Santa Cruz Foundation Board of Trustees, and a campaign leader.

"The campus is at the level of maturity not just in age but in terms of development of programs that makes this the right time for a campaign," he says.

"We have a great number of programs that make huge contributions, ones richly deserving of support."

SIGNATURE INITIATIVES

The campaign seeks support for signature initiatives in genomics, coastal sustainability, data science, and the arts. It will enhance the undergraduate experience that is a hallmark of UCSC, and excellence across all academic divisions. Undergraduate and graduate scholarships, endowed support for academic programs and faculty positions, and naming opportunities for facilities are included in the portfolio of giving opportunities.

"We can't assume others will spread the word or provide the funding. Each of us needs to do our part."

— Linda Peterson
Trustee and Campaign
Steering Committee chair

Why I Give



I was a quiet, shy student from a working-class background.

I was inspired by a three-quarter Community Studies project with the

California Rural Legal Assistance program. It helped me understand the importance of being involved with the community. Santa Cruz does that. From an inward place, you become conscious of the wider community. I want others to have that experience.

-LINDA PETERSON (Stevenson '70)

*UC Santa Cruz Foundation Trustee Chair, Campaign Steering Committee
Associate general counsel, Occidental Petroleum, Los Angeles*



I am extraordinarily grateful for the quality of thinking and community and intellectual endeavor I experienced at UCSC. A whole lot of people feel like I do and give

back. My motivation is the same as that of all the other volunteers—some not alums. Those who didn't go to school here have a similar feeling, which is that UC Santa Cruz is something very special.

-PAUL HALL (Merrill '72)

*UC Santa Cruz Foundation Trustee
Board president; member of Campaign Steering Committee
Partner, DLA Piper's litigation practice, San Francisco*

"It's not just the right time, it's about time," says Linda Peterson (Stevenson '70), a UCSC trustee and chair of the Campaign Steering Committee. **"We've been too shy too long."**

"We have reasons to be out there, to be proud of who we are and proud of what we've accomplished," continues Peterson. **"We can't assume others will spread the word or provide the funding. Each of us needs to do our part."**

Campaign volunteers have hosted events throughout California, in New York, and in other select areas to share UCSC's progress and the opportunities the campaign provides to extend the campus's impact and important contributions.

"To the degree the campaign is fruitful, it will give us the resources to take us to the next level on matters of great importance to the state, the country, and the world," says Hall.

FUNDING SHIFT

Funding of public universities in California and elsewhere has changed significantly in recent decades. In 1991, the state of California funded 50 percent of the UCSC budget; today it accounts for just 20 percent. The difference has meant that the cost to students to attend has steadily climbed to its current \$13,416 in annual tuition and fees, plus housing and other expenses.

"As a student, I assumed that UCSC would always be taken care of, but I didn't think about how that would happen," says Peterson. **"My friends and I didn't think about being alums,**

about the importance of continual involvement in the university. We were not aware what a difference donors make in all great universities."

Keeping UCSC's core strong, and elevating support in areas where it already has global impact, will require ongoing and major investment, says Peterson.

"We compete for the best and brightest—faculty, students, grants, everything," she says. **"It takes money. We can't stand still."**

INCREASED SUPPORT

By the end of the campaign, the university expects to have doubled the level of annual private contributions to UCSC. Achieving and maintaining increased levels of support is a key outcome for campaigns, and why they are so significant in the long term.

The university began intensive planning for the campaign several years ago and, together with donors and volunteers, secured leadership gifts over the past four years to set the pace and determine the campaign scope.

More than 63,000 gifts of every size have been made since counting toward the campaign began in July 2009. Among major gifts:

The Helen and Will Webster Foundation, \$5 million toward rebuilding the historic hay barn on South Campus into a home for sustainability studies.

continued on page 4

CAMPAIGN GOAL: **\$300 MILLION**

Total raised to date: \$146 million

TOTAL NUMBER OF CAMPAIGN DONORS:

41,518

NUMBER OF NEW DONORS DURING CAMPAIGN:

22,421

TOTAL NUMBER OF GIFTS:

63,228

CAMPAIN PRIORITIES

The Campaign for UC Santa Cruz is comprehensive. It seeks support for excellence in all areas and highlights initiatives and special projects.

THE STUDENT EXPERIENCE

The campaign's foundational initiative seeks support for enhancing learning, nurturing leadership, and launching lives.

Includes resources for the 10 residential colleges, reopening the Quarry Amphitheater, undergraduate research, and leadership development.

SIGNATURE INITIATIVES

UCSC GENOMICS INSTITUTE: Daring to imagine the defeat of cancer.

COASTAL SUSTAINABILITY: Protecting the fragile interface between land and sea.

LEADERSHIP IN DATA SCIENCE: Shaping the foundational science of the future.

INSTITUTE OF THE ARTS AND SCIENCES: The usual boundaries do not apply.

ACADEMIC DIVISIONS AND LIBRARY

SOCIAL SCIENCES: Includes launching nation's first Ph.D. program in Latin American and Latino studies, exploring emerging worlds, developing environmental leaders, and reconsidering economic systems.

PHYSICAL AND BIOLOGICAL SCIENCES: Includes marine science, astronomy and planetary science, the science of medicine, and student excellence.

HUMANITIES: Includes Institute for Humanities Research, Jewish studies, and New Humanists fund.

BASKIN SCHOOL OF ENGINEERING: Includes data science, genomics, games and playable media, and water and power sustainability.

ARTS: Includes Institute of the Arts and Sciences, film building, and named school of the arts.

UNIVERSITY LIBRARY: Includes renovating Science & Engineering Library, increasing digital access, and endowing collections.

Two new faculty chairs, the Narinder Kapany Professorship in Entrepreneurship and the Dorothy E. Everett Chair in Global Information and Social Entrepreneurship.

\$3 million in commitments toward rebuilding the marine mammal research pools and expanding classrooms on the Coastal Campus.

A gift of \$1 million by Rowland and Patricia Rebele will jumpstart efforts to build the new Institute of the Arts and Sciences.

STUDENT EXPERIENCE

Because the experience of undergraduates is so vital to the mission of UCSC—nearly 90 percent of the 16,770 students enrolled are undergrads—much of the campaign will focus on ensuring that experience is supported and developed.

"Students leave UCSC as engaged members of their communities, determined to make a difference in the lives of others," says Alison Galloway, UCSC provost and executive vice chancellor. **"It's a profound result. They've developed a real passion for each other. Not just for their friends and classmates, but they've developed a passion for humanity."**

Students' experiences in the residential colleges, in hands-on learning, in opportunities to become leaders all contribute to the process. Bringing new resources to the colleges and to programs that directly affect students is a vital part of the university's future and the campaign.

"One of the things currently missing from our campus is a place for large groups of people to come together as a community," Galloway says. It is why she has made the reopening of the Quarry Amphitheater at the center of campus one of her priorities in the campaign (see story, page 26).

Blumenthal says the campaign provides an extraordinary opportunity for alumni to reflect on what UCSC has meant to them in their lives and to engage with their alma mater.

"This is a wonderful opportunity to be part of something very special," he says. **"This is truly a moment for UC Santa Cruz."**

LEARN MORE

To learn more about the campaign and giving opportunities, please visit

campaign.ucsc.edu

Questions about ways to give:
Email: giving@ucsc.edu Call: (831) 459-2501

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THE CAMPAIGN FOR UC SANTA CRUZ

TRANSFORMATIVE EDUCATION

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Marc Shaffer (Stevenson '86) makes movies that challenge our assumptions about the world. **35**

Contributing writers

Amy Ettinger and Peggy Townsend are freelance writers based in Santa Cruz. John C. Cannon is a freelance writer now based in the Democratic Republic of Congo. He is a 2008 graduate of UCSC's Science Communication program.

THE CAMPAIGN FOR UCSC:

TRANSFORMATIVE EDUCATION

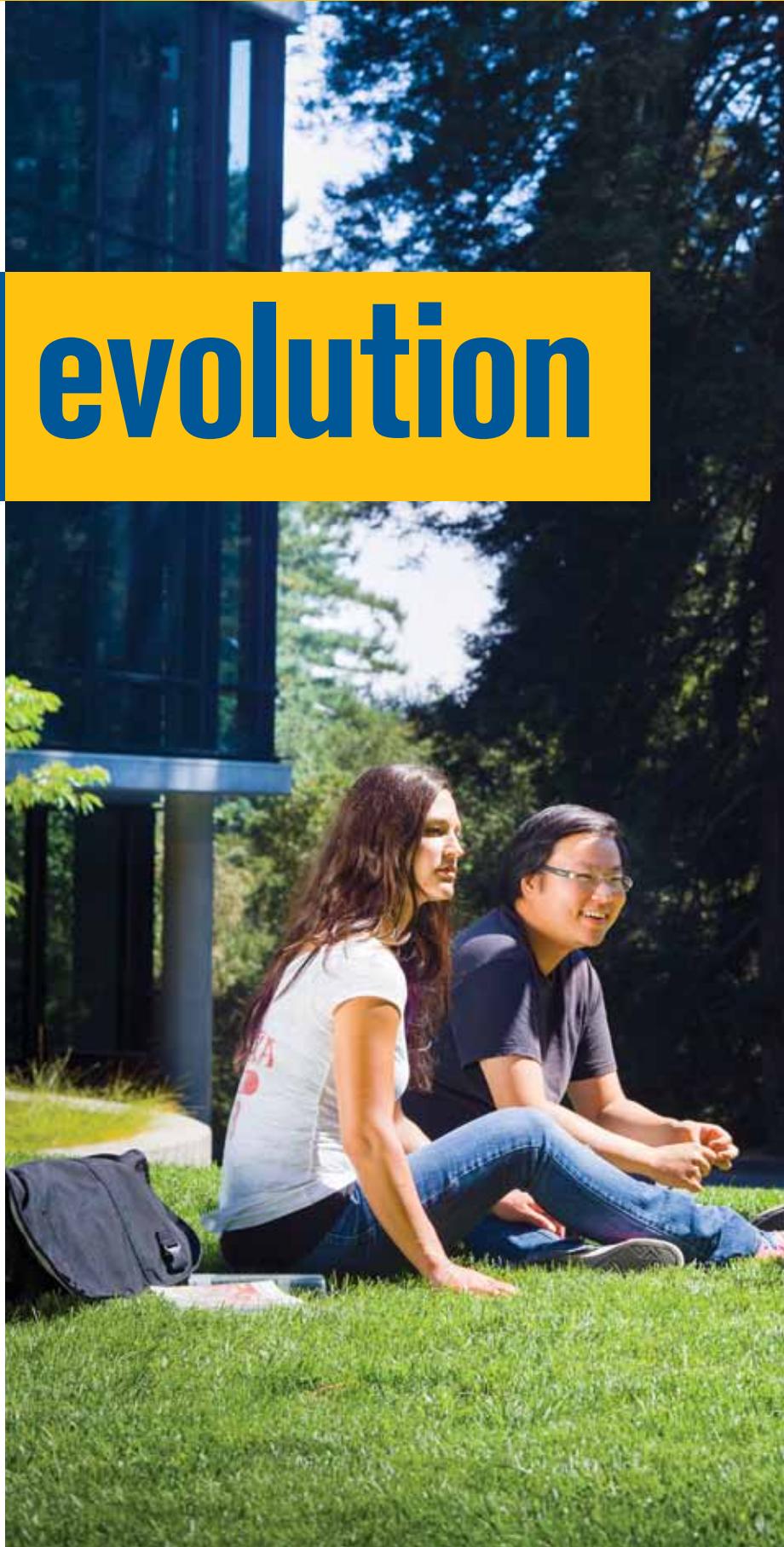
An extraordinary undergraduate experience develops highly engaged citizens and effective leaders.

College evolution

UCSC's colleges are ground zero for innovation—and they're home to new programs, fresh initiatives, and bold goals

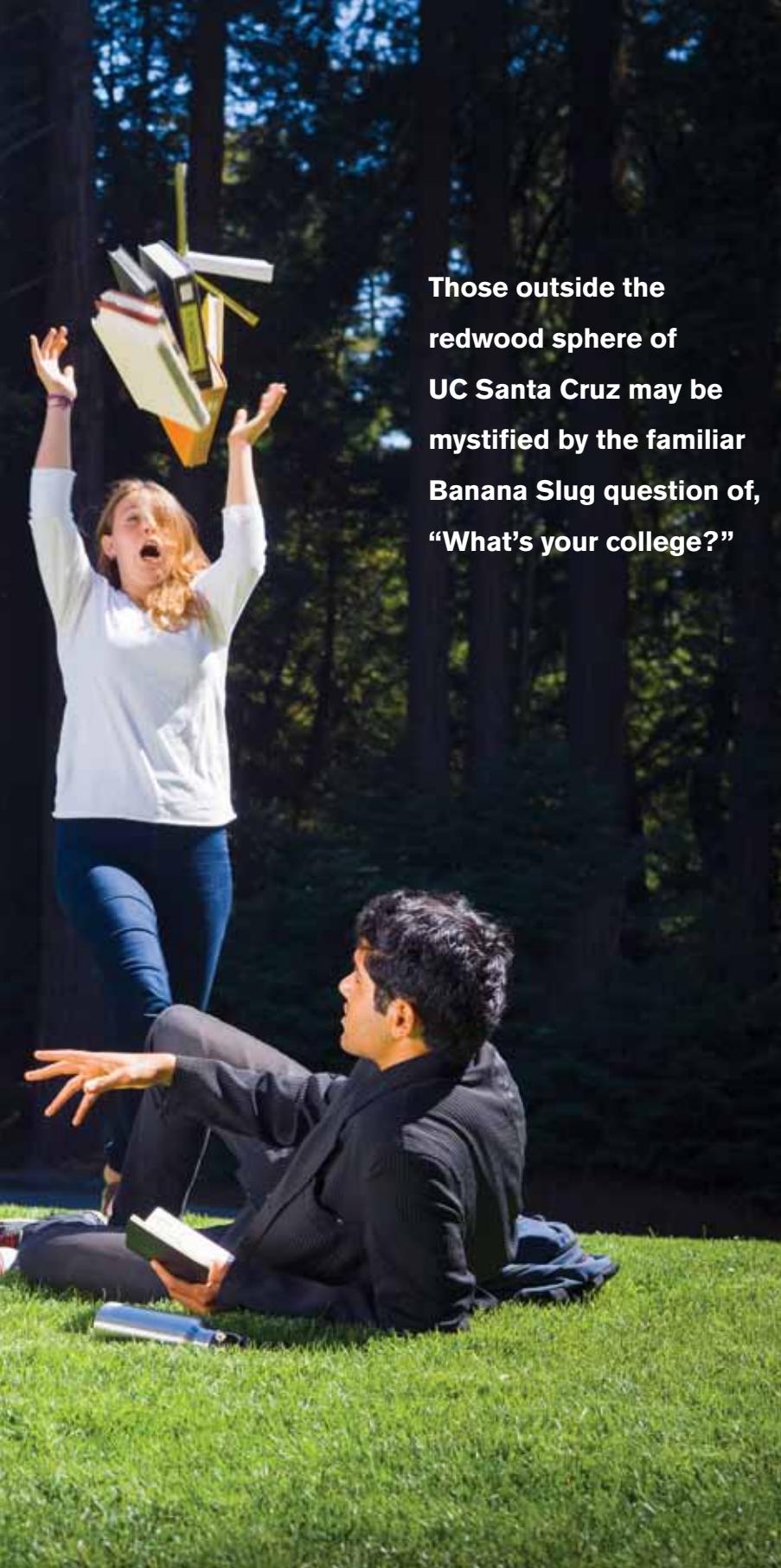
By Dan White

PHOTO BY ELENA ZHUKOVA



UCSC's college communities offer opportunities for hands-on learning and a sense of community, fostering high levels of student engagement and personal growth.

Students learn to challenge the expected, ask the big questions, and be active partners in learning and in life.



Those outside the redwood sphere of UC Santa Cruz may be mystified by the familiar Banana Slug question of, “What’s your college?”

To the uninitiated, that query may sound redundant. But if you’re a bona fide Slug, you know that UCSC’s students are part of both a prestigious university and a college—or, to be more specific, one of 10 residential communities that play essential roles in their academic and social experience here.

All undergraduate students, whether they live on campus or not, are affiliated with one of the 10 colleges at UC Santa Cruz. Each college provides academic support, organizes student activities, and sponsors events that enhance the intellectual and social life of the campus in addition to housing students in small-scale communities.

UCSC’s founders created the unique college structure with the intention of combining the intimacy of a small, liberal arts college with the depth and rigor of a major research university.

“A lot of public universities have great research missions, but they’re enormous and end up making you feel anonymous,” said Cowell College Provost Faye Crosby. “You sink or swim, and you may not get that collegiate experience.”

At UCSC, she said, “Each student feels that his or her college is a home, a neighborhood. Students get a feeling of closeness and collegiality, of ownership. This is *their* place.”

Colleges provide distinct intellectual and cultural environments, each emphasizing in its own way social responsibility, curricular innovation, and connections across the disciplines. The colleges all offer intensive and personalized academic advising; themed core courses; and cultural and curricular programming.

With the support of UCSC's top leadership, exciting new developments are happening in the colleges.

Undergrads work at grad level

The First Year Honors Program began in fall 2011 at Cowell College to give high-performing frosh the extra-rigorous curriculum they would normally encounter in graduate school, including special courses, seminars, and colloquia.

Since then, Crown College joined the Honors Program, which puts a special emphasis on challenging and immersive learning. One recent example: in a course offered through Crown, 15 freshmen set off on a quest to find viruses lurking in extreme saline environments. Under the guidance of biomolecular engineer David Bernick, the students in *Extreme Environmental Virology* got a taste of the South Bay Salt Water Ponds as well as graduate-level research.

Since then, Kresge, Stevenson, and Merrill colleges joined the Challenge Program, another program geared toward intellectually ambitious students and including classes, presentations, and research opportunities.

Both the Honors and Challenge programs include close interactions between UCSC faculty and academically motivated peers in classes, social settings, and collaborative projects.

Community studies returns

Oakes College now hosts the revived community studies major, which was suspended in 2010 because of budget cuts. Back and

accepting new students, the program is a perfect match for a college with Oakes's multicultural community and strong commitment to social justice, said college Provost Kimberly Lau.

The major, founded in 1969, integrates experiential education—a six-month, full-time field study—with campus-based classroom learning.

Each year, the program will accept up to 70 new undergraduate students who will take courses in the social sciences and humanities along with the community studies core curriculum based at Oakes.

This arrangement, Lau said, "will help Oakes tremendously" because the collaboration also allows Oakes to offer a certificate in Service Learning and Community Justice. Leslie Lopez, the lecturer who teaches the *Intro to*



COWELL

STEVENSON

MERRILL

CROWN

PORTER

A roundup of the latest at the other colleges:

CROWN COLLEGE attracts academically focused students, especially in the science, technology, engineering, and math (STEM) areas. New development: One of Crown's recent traditions is the popular Social Fiction Conference, a creative colloquium with a special focus on ethics and morality within the genres of science fiction, fantasy, and gaming. **GOAL:** To establish a strong endowment to support the Crown Science Learning Community (SLC) and the Writing Initiative.

PORTER COLLEGE is known for its commitment to the arts and the dedication of its

writing faculty to individualized instruction. New development: Partnerships with public schools that bring Porter students into local classrooms to share their expertise in the arts and connect the university and the community. **GOAL:** To expand the range of these partnerships and foster greater collaboration among the arts, humanities, and sciences at the college.

COLLEGE EIGHT features world-renowned environmental, ecological, and sustainability programs and initiatives. The college is gearing up to offer a minor in sustainability studies. New development: The college recently set up a sustainability

themed floor in one of its residential buildings and plans to begin a new series of environmental and sustainability internships.

GOAL: To provide students with the social, scientific, and engineering tools to succeed in the new "green economy" through social enterprise and entrepreneurship.

COLLEGE NINE has a strong focus on international and global perspectives, while its sister college, **COLLEGE TEN**, emphasizes social justice and community. They are distinct colleges that share a provost, and are affiliated with the Division of Social Sciences. New developments: College Nine established the iFloor, an international resi-

Community Studies course, will direct the program and develop a range of courses that ground service learning experiences in an academic context to help students understand the social, political, and historical factors shaping today's world.

Community studies has more than 1,000 alumni, including 100 who have founded public service nonprofits, most of them in California. Hundreds of others lead nonprofits or serve on their boards of directors.

Merrill field-study program resurfaces

Merrill College, with its activist learning focus, shuttered its extensive field-study program 20 years ago, after 25 years of local, regional, and international impact and

learning. Now the program is back—but don't mistake its return as a nostalgic gesture, said Merrill Provost Elizabeth Abrams, who calls it "an important and relevant revival, designed for students dealing with the circumstances of today."

Building on an existing school placement program, Classroom Connections, the new program will blend service with experiential learning. The field-study program, which will launch in spring 2014, is accumulating a range of internship opportunities, starting with local and regional and building toward international placements, while Classroom Connections specializes in educational internships, placing Merrill students in public elementary and high school classrooms in several California communities.

Through a new partnership with nearby Pescadero, undergraduates will assist in high school classrooms and help run enrichment programs for the mostly bilingual, Latino, and bicultural students.

In such programs, "a little money goes a very long way," Abrams said. For instance, it costs only \$5,000 to put 48 UCSC students in Pescadero classrooms for the year, with most of the money going toward transportation.

Merrill is also starting new peer-mentoring programs that provide work-study jobs for students, and a cross-generational mentoring program that brings alumni, emeriti, and former staff back to the college to support Merrill students finding their way at UCSC.

COLLAGE



PHOTOS BY DON KENNY, TOM VANDYKE

KRESGE

OAKES

EIGHT

NINE

TEN

dential-learning floor for first-years. College Ten dedicated the new Terry Freitas Café with the generous support of Terry's grandmother, Ethel Shelley. Terry (Crown '97, biology) was killed at 24 after successfully protecting the land of the indigenous U'wa tribe in Colombia from commercial drilling.

GOALS: College Nine hopes to expand support for UCSC's growing international student population, specifically the iFloor, while College Ten is seeking support for its Social Justice and Community Leadership Certificate program as well as its Pathways to Distinction program.

STEVENSON COLLEGE is known for its

emphasis on critical reading of the classics and debating skills, its well-regarded Ethics Bowl and Rainbow Theater, and its history of student-initiated clubs. New development: The Stevenson Challenge Program provides high-achieving students with close interaction with UCSC faculty and support for collaborative research projects. **GOALS:** Bring in a series of inspiring guest speakers, expand the lending library, and improve facilities like the Coffee House, Knoll, and Garden.

KRESGE COLLEGE is known for its long and important association with writing instruction. The college's core course theme is "Power and Representation."

New development: The recently established Common Ground Center promotes social and environmental change through undergraduate-focused action-education, research, advocacy, and civic engagement.

GOAL: To attain permanent funding for the Common Ground Center, which brings together social, environmental, and economic sustainability, features undergraduate research, and has an experiential-learning focus with a campus-community partnership orientation.

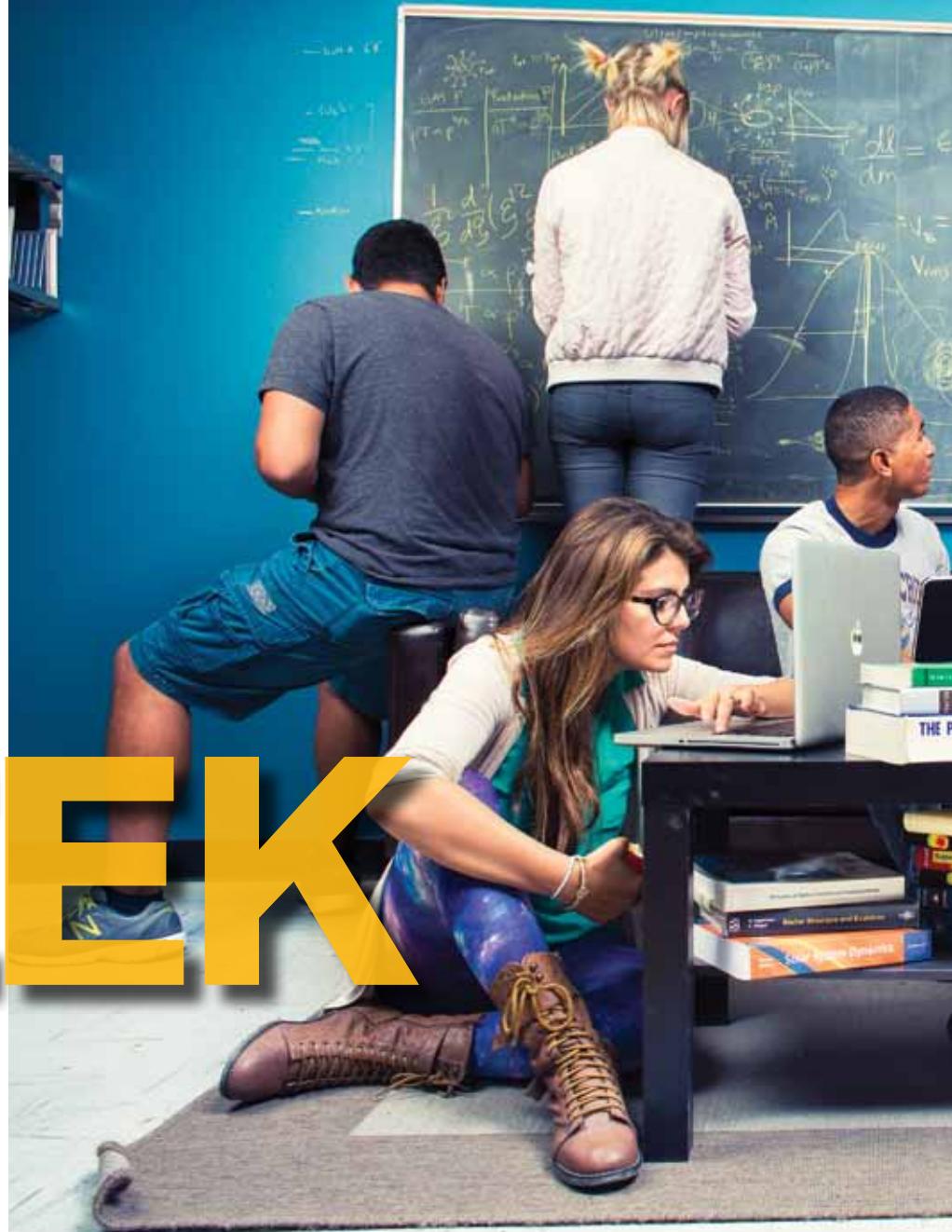
Groovy couches, big brains, and great camaraderie abound in Enrico Ramirez-Ruiz's super-computer lab for undergrads

GEEK

Visiting the supercomputer lab for undergraduates (SLUG) is a little like being transported onto the set of the *Big Bang Theory*.

It's cool to be geeky when you're surrounded by black leather couches and a handful of smart undergraduates talking about coding and data analysis.

SLUG is the brainchild of Enrico Ramirez-Ruiz, professor of astronomy and astrophysics. The three-year-old lab is designed for physics and astrophysics majors who want to learn to become independent scientists. It's also become a support group and coffee klatch for these young physicists, who need a place to vent and brainstorm.



Ramirez-Ruiz said he was inspired to create the lab because of an internship at Los Alamos National Laboratory in which he participated as an undergraduate at the Universidad Nacional Autónoma de México.

"That summer changed my life," said Ramirez-Ruiz, who went on to earn a Ph.D. in astronomy and astrophysics at the University of Cambridge (U.K.).

Ramirez-Ruiz is hoping to have a life-altering impact on the half-dozen students at the lab, who come from a diverse range of economic and cultural backgrounds.

Aaron Lopez (Oakes '15, physics) is new to SLUG. He transferred from Hartnell College in Salinas, and was introduced to Ramirez-Ruiz by a mentor.

"Enrico and the others have given me a better idea about what I want to do in life, more so than other experiences because I was never exposed to any such group work in the field before," said Lopez.

The students are all working on separate projects under the guidance of Ramirez-Ruiz and graduate student mentors. They work in the lab every day and check in with each other about research triumphs and frustrations.

Melinda Soares-Furtado (College Nine '13, physics) said it's that sense of camaraderie that attracted her to UC Santa Cruz. Soares-Furtado, first in her family to go to college, transferred from Gavilan College in Gilroy, where she excelled and was granted admission to several four-year universities.



CHIC

Students work in the SLUG with Enrico Ramirez-Ruiz (far right), professor of astronomy and astrophysics.

PHOTO BY ELENA ZHUKOVA

"I chose to come here because people work as a team at UCSC," said Soares-Furtado. "We try to inspire one another."

There's also a healthy dose of competition mixed into the chemistry of the lab. The biggest angst-causing issues: Who will get into a top graduate school? Who will be published first?

Soares-Furtado is in her last year at the SLUG, and is currently applying to 13 different graduate schools. She studied for the GREs with fellow SLUG students.

Since its inception three years ago, graduates of the lab have gone on to top grad school programs in astronomy and physics at universities including Princeton, Harvard, Columbia, UC Santa Barbara, UC Santa Cruz, Stanford, and Cambridge.

Andrea Derdzinski (Merrill '14, astrophysics) said working in the lab is great motivation. "You see someone advancing and you feel like you need to hurry up and get your work done."

She added that working in the lab is very different from time in the classroom, where students usually tackle one topic at a time. "Here we have to piece it all together."

Monique Windju (Oakes '15, astrophysics) agrees that the SLUG is about more than just academic or practical knowledge. "We're learning how to learn," she said.

It can be a steep learning curve for students who are new to the lab.

Ivan Alvarado (College Eight '16, applied physics), a transfer student from Los

Angeles Community College, says it's been a "pretty challenging transition."

"In school you get an assignment, but here you have to have the self-initiative where you have to look for things on your own," said Alvarado.

Soares-Furtado said her time in the lab has given her the self-confidence she needs to succeed in a male-dominated field.

"It seems like it should be commonplace to have a center like this," said Soares-Furtado. "If you're new to the field, I feel like this is something really important."

—Amy Ettinger



REALLY SPECIAL COLLECTIONS

From an ancient tablet to the sci-fi visions of a cult-classic author, the University Library's Special Collections holds a repository of astonishing artifacts

Beth Remak-Honner was at her job as head of the University Library's Special Collections & Archives at UC Santa Cruz when a student asked to see her.

"My professor said you could show me something awesome," he told her.

Remak-Honner, used to obscure requests from scholars and authors, didn't hesitate. She brought out a 19th century illustrated version of Goethe's *Faust* that promptly blew the young man's mind.

If you can't make it to Special Collections, here are 10 "awesome" artifacts that just might blow your own mind.

1. A 4,000-year-old cuneiform tablet. Sepia-toned and slightly bigger than a stamp, the tablet is an ancient shopping list for beer, barley, and onions.



2. A globe of the planet Mars. This globe was owned by renowned sci-fi author Robert Heinlein, who collected planetary and sky globes.

3. A painting that is really a letter. Expressionist artist Morris Graves sent a tempera-on-paper painting to composer

John Cage featuring mushrooms and the note "Dear John: Yum, Yum." It's part of Cage's extensive mycology collection now held at UCSC.

Left, *Bower Bird* by Daniel Essig, 2009, sculpture with miniature books and nails, made of mahogany, handmade paper, milk, paints, and nails.

Below left: 4,000-year-old cuneiform tablet

Below: book in a can; below right: 1554 illustrated book of veggies and herbs

4. A book in a can. Peter and Donna Thomas, noted fine book artists, created an illustrated excerpt of John Steinbeck's *Cannery Row*, and presented it in a tin can. Peter studied book arts with the poet William Everson and graduated from UCSC in 1978.

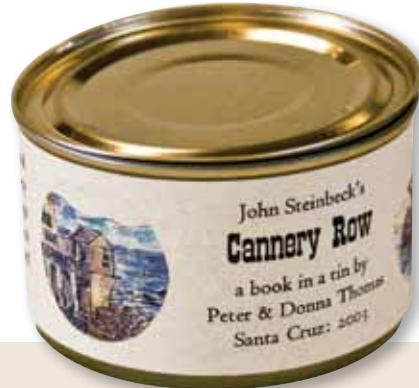


PHOTO BY JAMES MACKENZIE

Easing the BURDEN

Alumni Association Scholarship helps determined math/econ major stay in school

In October 1998, Hurricane Mitch slammed into Honduras. The Category 5 storm killed thousands of people, destroyed villages, and caused President Carlos Roberto Flores to declare that the storm had obliterated 50 years of progress.

For a young seamstress named Consuelo, the storm meant an end to her livelihood. The single mother fled to the United States, where she

earned her AA degree while working and raising her son. Today, she is a social worker, is remarried, and is living a good life.

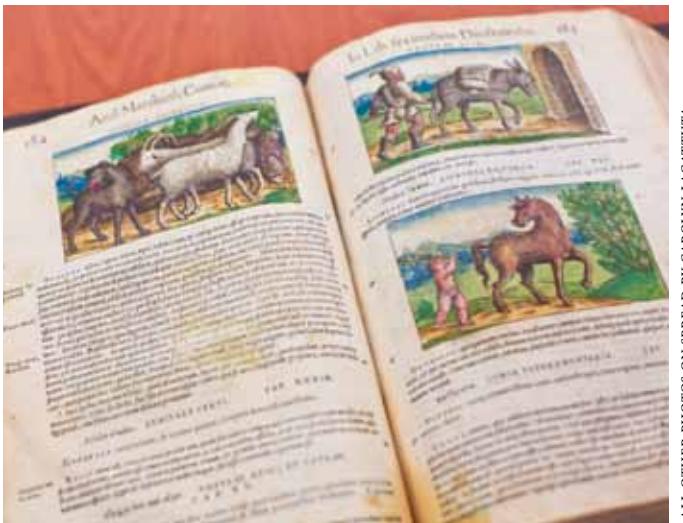
"My mom is definitely inspiring to me," said her son, Bryan Monjes, a math and economics major at Cowell College. She has motivated him to work hard to achieve his goals, he said.

Monjes's high school volleyball coach, Matt Schutz, remembered the teen as someone determined to succeed and do the right thing.

"When we would do conditioning runs he was always the first one

5. A 400-year-old astrology chart. Prepared by noted astronomer Johannes Kepler for Austrian nobleman Hans Hannibal Hütter von Hütterhofen, this astrological chart may have either been done for extra cash or as part of Kepler's duties as court mathematician.

6. A book of herbs, vegetables, bugs, and farm animals. Printed in Venice in 1554 and lavishly illustrated with over 600 hand-colored woodcuts, this tome by Pietro Andrea Mattioli was likely owned by someone who wished to impress visitors. It was recently purchased using funds donated by local community members.



ALL OTHER PHOTOS ON SPREAD BY CAROLYN LAGATTUTA

7. Portrait of astronomer William Wallace Campbell. UCSC has one of the best collections of astronomer portraits in the world. Many of them are old cabinet cards (like calling cards), handed out by these scientists and held in the Lick Observatory archives housed in Special Collections. Campbell went on to become the University of California's 10th president.

8. A ship's porthole. Anti-nuclear activist Earle Reynolds, the son of a family of trapeze artists, left boxes of maps, photos, and memorabilia to UCSC. Reynolds was best known for

sailing his family into a nuclear test zone in the Pacific in protest of those activities. Some of his materials had to be tested for radioactivity before they were accepted in the collection.

9. Portrait of Kathleen Cleaver. Cleaver, now a lecturer at Yale, was formerly married to early Black Panther leader Eldridge Cleaver and is known for her involvement with the Black Panther Party. Pirkle Jones and Ruth-Marion Baruch's landmark 1968 photographs of members of the Black Panther Party were donated to UCSC in 2003. Their collection, estimated to be worth \$1 million, also includes documentation of the fates of old California towns and the Summer of Love in the Haight-Ashbury.

10. Photograph of the Czar's golden tableware. Taken in the Kremlin in 1931, this picture is one of 8,000 hand-tinted lantern slides from the collection of photographer Branson DeCou. Much of his work, in

cluding shots of old Cuba and Ireland, has been digitized and is available for viewing online.

With rooms full of photographs, documents, books, and art, UCSC's Special Collections offers access to the library's most unique holdings for educational, private study, and research purposes.

It collects, organizes, describes, preserves, and promotes collections that hold particular historical and cultural significance; houses and provides access to publications and archives focusing on the geographic region of Santa Cruz; and serves as the repository for UCSC administrative archives and records.

It is the home of the Grateful Dead Archive, contains the largest holding of Edward Weston photographs in the country, and houses the complete archive of Hugo Award-winning science fiction writer Heinlein—author of *Stranger in a Strange Land*, *Starship Troopers*, and other classics.

—Peggy Townsend

to finish, and he was always the last guy to leave the weight room," Schutz said.

That determination continued at UCSC, where Monjes, who plans to graduate in 2016 and pursue a career in financial planning, not only carried a full load of classes but also worked 30 hours a week at a sandwich shop and coached junior varsity volleyball at San Lorenzo Valley High School.

The jobs were a necessity, Monjes said, after an injury forced his mother to go on disability for

a time. Even though his father works as a landscaper, tuition costs were almost more than the family could handle.

"It was kind of a Catch-22," said the 18-year-old. "If I don't work, I can't go to school, but work sometimes meant I missed classes."

A \$1,500 Alumni Association scholarship that brought a matching \$1,500 award eased some of the burden.

"The scholarship saved me," said Monjes, who hopes to rearrange some of his work schedule to al-

low him more time for study this year. "It kept my education going."

UCSC Alumni Association memberships have helped build the Alumni Association Scholarship Fund, which has distributed almost \$1.5 million in scholarship aid to more than 600 UCSC students since 1991.

To join, visit alumni.ucsc.edu.

—Peggy Townsend

Bryan Monjes (Cowell '16, mathematics and economics)



GENOMICS & ETHICS: CRACKING THE CODE

UCSC researchers, leaders in the field of genomics, are at the center of the debate on how newly emerging genomic information should be used

By John C. Cannon

PHOTO BY ELENA ZHUKOVA



the world's top universities for research influence as measured by the number of times its faculty's work is used by others. Researchers here are developing the technolo-

gies, ideas, and leaders who create solutions for today's vexing issues, while envisioning a healthy and sustainable world of tomorrow.



In June the United States Supreme Court barred the patenting of genes, ruling that a company couldn't have exclusive access to naturally occurring molecules. This decision sorts out a big piece of the debate on how genomic information should be used, but a UCSC sociologist says it's only the beginning.

"It's pretty easy for people to say that we ought not to own life," says Jenny Reardon, associate professor of sociology. "It's pretty hard to then start talking about the details. Who controls and owns the data?" Reardon is currently wrestling with those details for her second book, *The Post-Genomic Condition: Ethics, Justice, Knowledge After the Genome*.

The price tag for sequencing a human genome has plummeted, and that means sequencing centers are unleashing a lot more data. Researchers have done well to keep pace, developing powerful algorithms to make sense of all the raw As, Cs, Gs, and Ts—the shorthand for the bases that populate our DNA.

But many of the ethical and legal conundrums remain unresolved: who owns all this data, who should have access, and for what purpose? To address these issues, Reardon and other UCSC researchers are tearing down the barriers between social science and biology to sort out a code of conduct for handling genomic data.

Reardon founded and directs the Science and Justice Center to encourage discussion of these types of issues that sit at the interface of science and society. And David Haussler, distinguished professor of biomolecular engineering, is helping to organize a global alliance to arrive at a consensus on how to handle genomic information, currently involving more than 100 institutions in eight countries. Together, they hope that UCSC, with its reputation for interdisciplinary dialogue and its scientific imprimatur in genomics, will extend its role in the debate beyond the hilltop campus overlooking Monterey Bay.

WHOSE DATA?

Early on in the genomic age, David Haussler's group posted the first draft of the human genome online and made it publicly accessible. Soon after, Haussler's group established the UCSC Genome Browser, a publicly available database for exploring the genomes of humans and other species. "In those days, everything was great, open science," says Haussler. "We considered the genome to be the common heritage of humankind," he adds.

That first human genome sequence was a composite from multiple anonymous people, so it did not reveal the genetic information of any individual. Now, however, many more people are having their personal genomes sequenced.

The unique differences in the genomes of thousands of individuals, when combined with medical records that show how these changes affect human health, hold enormous potential. Imagine a world in which an oncologist can tailor a cancer patient's chemotherapy regimen, not just to the specific mutations in her cancer cells, but also to the way her body reacts to certain drugs—all based on robust conclusions derived from data from many individuals. But these individual sequences could also reveal things we may want to keep private, including our risk for certain diseases.

Establishing the UCSC Genomics Institute is a signature initiative in The Campaign for UC Santa Cruz. Its goal is to become the nation's primary resource for articulating and analyzing massive amounts of genomic data to create breakthroughs in human health.

It would build on the UCSC Cancer Genomics Hub. Known as CGHub, it holds genome sequences of normal and tumor tissue from thousands of cancer patients involved in studies run by the National Institutes of Health (NIH), and access to its data is strictly controlled.

Sharing the data more widely might speed the discovery of clinically useful insights, but could also compromise the privacy of individual donors. The danger is that individuals' identities could be traced back from the genome sequences in an open database. For example, if an insurance company links your personal information with your genome and deduces that you have a higher risk of disease, it might deny you coverage completely or bump up your rates, though

federal laws such as the Genetic Information Nondiscrimination Act are designed to make this illegal for health insurers.

Protecting patients' privacy can also stymie the science intent on searching out new discoveries in the data. One way around this problem is to make interpreted data available in a higher-level form, one that's difficult to trace back to an individual but still useful for mining meaningful patterns in the genome. Josh Stuart, UCSC professor of biomolecular engineering, is building this type of database to collect and analyze interpretive information derived from the raw sequences stored in CGHub. Funded by a \$3.5 million NIH grant, Stuart's database will be a veritable playground for bioinformaticians from all over the world—including Haussler's own team of experts—allowing them to test out algorithms designed to draw meaningful conclusions about the molecular signatures of cancer, with much lower security restrictions compared to CGHub.

How best to handle the growing number of genome sequences and other highly personal streams of data remains an open question, and Haussler and Stuart agree that it's something all genomic scientists must face in every step of their research.

So, while the ruling against gene patents represents a win for openness, experts must now wrestle with how to square data-sharing with a healthy respect for donors' rights. Guidelines from international bodies, technological firewalls, and legislation each play a role in the solution, Haussler says, but any use of genomic data must begin with a signed sheet of paper.

EMPOWERING INDIVIDUALS

Giving individuals the chance to make an educated decision about how their personal data will be used is known as "informed consent." Though it's a step that nearly everyone agrees must be the starting point, the best way to obtain consent is still up for debate.

"If we make the process so arduous that you basically have to get a master's degree in genetics in order to be sufficiently informed to grant consent, then you're not going to get much participation," Haussler says. Conversely, informed consent that's too general might leave donors scratching their heads about just what they signed up

for and who has access to their data.

In Stuart's view, the "archaic, paper-based system" of informed consent currently in place needs to catch up and allow the "magnanimous and brave individuals" eager to contribute to science to do so. Ever the energetic systems biologist, he believes that part of the answer lies in better use of technology.

The study of genomics is moving so quickly, he says, that unanticipated uses of genetic information are cropping up at a fast clip. When that happens, "It's really hard to go back and find those individuals to re-consent them for a different use of the data," he adds. By leveraging social networking tools, he says scientists can communicate with prior research subjects to use their data in new ways and ultimately use that genetic information to fight disease.

A HUMAN SOLUTION

Informed consent, however, has its limits, says Reardon, especially when we know so little about how genomic data might be used in the future. Nuanced solutions will require discussion between all members of society. Just in the last year, the Are You My Data? workshop and the Genomics Gets Personal panel brought together leading scientists, legal scholars, and many others to deal with difficult questions in a "trusted space."

Few issues are too sensitive to take on. Panelists might debate the need for committees to control access to genomic data. Or they might argue about the disparity in how science has treated minorities.

"One of the things Science and Justice has done is innovate methods that enable us to have that kind of difficult conversation," Reardon says. "I think that's what we're getting good at." And bridging those gulfs of understanding is a role that suits UCSC well.

That commitment to dialogue is why Reardon, a social scientist, has an office in Haussler's genomic laboratory, and why members of his lab routinely participate in forums at the Science and Justice Center.

No one thinks it will be easy, but Reardon and Haussler agree that these are problems worth solving. As Stuart puts it, "When we do crack the code for how to use this information correctly, the human race stands to go leaps and bounds ahead."

DATA DILEMMA

As the tide of digital information swells, so do problems and concerns—and UCSC is leading the way toward solutions

In a world where paper files are almost a thing of the past, how do you know your medical records are accurate? Will that photo you took four years ago still be there? How can you be protected from hackers who could attack your bank and destroy your account data?

Those are just some of the questions on the minds of researchers at the Center for Research in Storage Systems (CRSS), a new Industry/University Cooperative Research Center at UC Santa Cruz, supported by the National Science Foundation (NSF).

"Everything is being stored digitally rather than analog," said Professor Ethan Miller, director of the CRSS. "There's an astounding amount of data that's being created every day. How do I know it's safe and secure? How do I know the data I stored is exactly the data I'm getting back? How can I find what I want?"

It's those issues of security, manageability, and safety that are growing more important—not only to individuals but also to government and business.

The federal government is dealing with those problems by creating the Utah Data Center, a data storage facility for the intel-

ligence community. But companies are turning to places like the CRSS for help with their long-term storage problems. Facebook and Google want to be able to process consumer data, for instance, but they need to be able to store it first. Leadership in Data Science is a signature initiative in The Campaign for UC Santa Cruz. The university is poised to significantly shape this foundational science of the future. Many of the nation's biggest high-tech companies are already partnering with UC Santa Cruz in storage systems research. And faculty in UCSC's Baskin School of Engineering, such as Darrell Long, Malavalli Professor of Storage Systems Research, have longstanding relationships with the information storage industry.

"We're close to Silicon Valley and have good, tight connections. We meet with industry leaders regularly," Miller said.

Just how much data is out there? Corporations are now regularly dealing with petabytes of information. One petabyte equals 1,000 terabytes; one terabyte equals 1,000 gigabytes.

Miller compared the data storage problem to a medical disease that has no known cure.

"Data storage is going to continue being a big issue," Miller said. "The problem will change over time, but I don't think it's something that will be solved in 20 years." Companies and individuals will always want to store more data and do more with it.

Current industry leaders who are members

of UCSC's Industry/University Cooperative Research Centers include IBM, EMC, NetApp, Hitachi, Samsung, SanDisk, HP, LSI, Huawei, Permabit, and, most recently, Intel.

Each company pays \$50,000 a year for royalty-free patents, said Andy Hospodor, executive director of the CRSS. Members attend semi-annual meetings with faculty and students, and have an opportunity to collaborate with CRSS. Typically, industry-student relationships lead to multiple job offers for M.S. and Ph.D. graduates.

At this point, the leaders of big-name companies are seeking out the brainpower of UC Santa Cruz.

"When I met with the dean a couple of years ago he asked, 'How will I know when this program is successful?'" Hospodor said. "I told him when I no longer have to recruit industry leaders. We're at that point now."

UCSC faculty also partner with leaders at other institutions of higher learning, including Harvard and Santa Clara University.

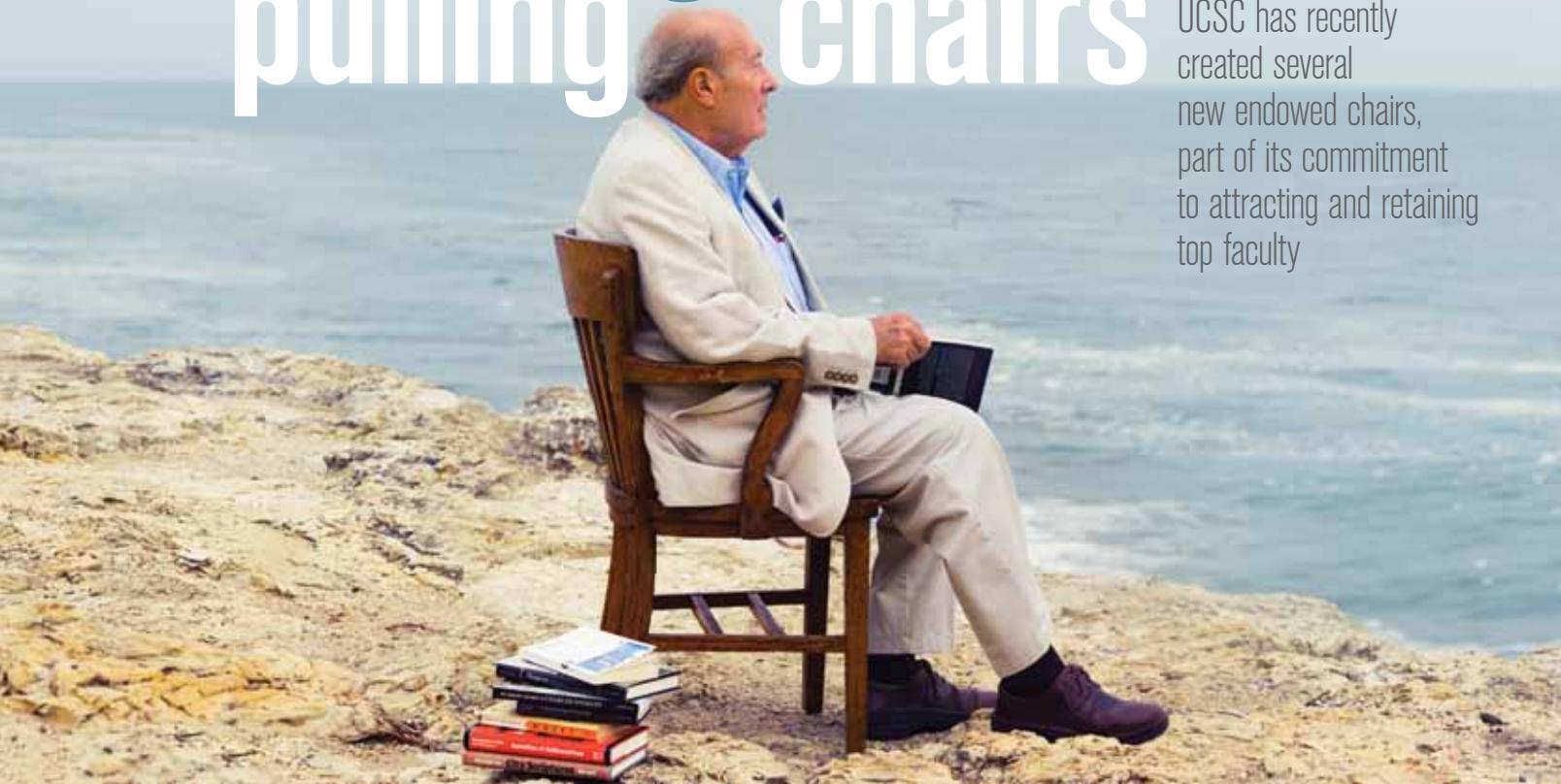
The data storage field will be a big employer in the future, as government agencies and private corporations try to grapple with data storage questions.

"It's an important problem for society, not just computer scientists," Miller said.

—Amy Ettinger

pulling UP chairs

UCSC has recently created several new endowed chairs, part of its commitment to attracting and retaining top faculty



Murray Baumgarten, distinguished professor of English and comparative literature

How does a university attract and keep the very best faculty—the brightest stars, those who are leaders in their fields, internationally recognized, and widely acknowledged as excellent teachers as well as accomplished researchers?

One answer is endowed chairs—gifts that honor and recognize the distinction of top faculty while providing invaluable financial support above and beyond salary, for use in research, teaching, or service activities.

Here are a few recently instituted endowed chairs at UCSC.

A SOLID FOUNDATION FOR JEWISH STUDIES

Murray Baumgarten, distinguished professor of English and comparative literature, started the Jewish studies program and undergraduate minor and major.

In recognition of Baumgarten's vision, a gift from the Helen Diller Family Foundation

established a substantial Jewish studies program on campus.

Now Baumgarten's legacy is being honored by the establishment of the Baumgarten Endowed Chair for Jewish Studies, which will anchor the leadership for the Center for Jewish Studies at UCSC.

Gifts from nearly 200 individuals and several foundations have contributed to the chair.

SUPPORTING THE ENTREPRENEURS OF THE FUTURE

UCSC students with great business-related ideas ideally develop their ventures with a combination of "real world" experience, industry partnerships, and intensive learning.

Last year, Narinder Singh Kapany, a former UCSC professor and currently a UC Santa Cruz Foundation trustee, showed his support for enterprising students by making a \$500,000 gift to establish a professorship in entrepreneurship.

A pioneering fiber-optics researcher, and an entrepreneur in his own right, Kapany will help entrepreneurship programs grow and thrive.

UCSC offers courses in business development and business planning, as well as seminars and other opportunities for students to meet with venture capitalists, business managers, and experienced entrepreneurs.

"Students learn how to turn good ideas into viable business plans," said Brent Haddad, associate dean of engineering for technology management.

Kapany also endowed the Narinder Singh Kapany Chair in Optoelectronics at the Baskin School of Engineering in 1999.

BOOST FOR GIIP

UCSC is known for its commitment to social justice as well as its emphasis on information technology—so it makes sense that these disciplines would converge in one program.

The Global Information Internship Program (GIIP) combines practical technological training with social justice ventures to create a new generation of "digital social entrepreneurs."

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Institute for Humanities Research asks questions that touch the core of human existence

People at UCSC's Institute for Humanities Research like to ask big questions. They wonder, for instance, what role philosophy has in genomics, what ancient people thought about death, and how commodities like salt and silk changed the course of history.

These inquiries touch the very core of human existence by helping us understand who we are, where we come from, and where we are going, according to Irena Polic, associate director of the institute (IHR).

Or, as she explains, "They're things everyone cares about."

Founded in 1999, the IHR is an umbrella organization for innovative thought. Its \$1.3 million budget provides incubator grants for interdisciplinary research in subjects like ethics, history, language, labor, and religion. With its help, faculty, graduate students, and even undergraduates have examined issues as diverse as the AFL-CIO's Cold War intervention in Honduras, the integration of Catholic schools in New Orleans, and the relationship between labor and what we eat. Besides locating grant money to expand research, it also supports a dozen centers that focus on topics like classics, Jewish studies, and the Mediterranean region.

Along the way, notes Institute for Humanities Research Director and Professor of History Nathaniel Deutsch, it also gives students opportunities to develop fundamental skills of research, writing, critical thinking, creativity, and imagination.

Housed in an airy, fifth-floor office, the institute operates at a time when critics are putting humanities on the endangered list as a non-job-generating course of study

THINGS EVERYONE CARES ABOUT

that has sent students scurrying to science, technology, engineering, and math.

That's not the case at UCSC, argues Deutsch, where one in six degrees were in the humanities last year. But, he believes, it's also a misconception to think humanities and science have no place together.

Deutsch points to several interdisciplinary research clusters being supported by IHR. Among them is one that has brought together biologists, chemists, and philosophers from four UC campuses, Stanford University, and the University of San Francisco, along with mathematical modelers at Google, to look at genomics and race—from race's role in the development of new drugs to the commercial use of DNA to discover a person's ancestry.

While book and journal articles are expected to emerge from this project, Principal Investigator Rasmus Grönfeldt Winther, UCSC associate professor of philosophy, also hopes "to develop a

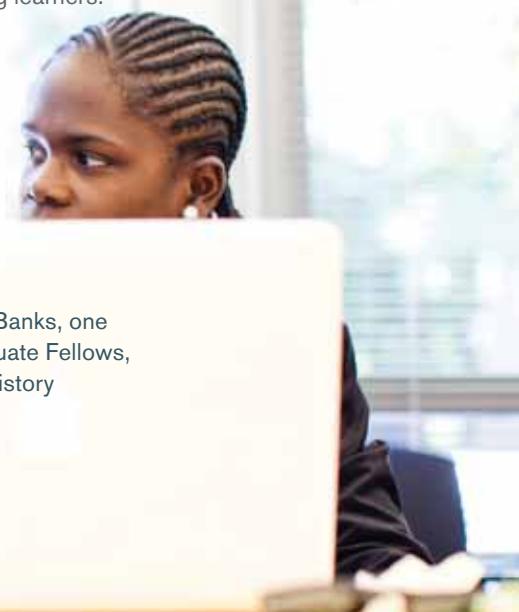
shared set of concepts, ethical principles, and even metaphors, that scientists and humanities scholars—who often have very different backgrounds—can use when we talk about the political and highly charged issue of race."

Both Polic and Deutsch believe these kind of intellectual products should be shared with the public. Last year, they organized a day-long series of talks and presentations on topics including slavery, cannibalism, and the ethnography of disasters that drew 250 members of the public to Santa Cruz's downtown Museum of Art and History.

This year, they also are discussing town-gown collaborations like the possibility of having UCSC faculty and students help renovate the museum's California History exhibits.

"Engaging in the humanities lets us see the world from different points of view, and so helps us better understand ourselves," says William Ladusaw, professor of linguistics at UCSC and dean of humanities.

It is also at the heart of a liberal arts education, which, he says, "prepares students for productive and creative careers as lifelong learners."



Pictured: Elyse Banks, one of the IHR Graduate Fellows, working in the History Department.

—Peggy Townsend

BLURRING THE LINES



By Dan White

The Institute of the Arts and Sciences promises to explore unexpected convergences, provocative subjects

An **immersive exhibit** on climate change, showing wall-sized photos of Antarctica, complete with ambient sounds. A **close-up look** at conceptions of human health, filled with contemporary art, African divination objects, huge photos of frozen viruses, and data from the forefront of cancer research. A **tour** through the politics of water consumption and the future of America's water supply, including satellite imagery and an interactive, multimedia look at a threatened Sierra Nevada watershed.

These are the kinds of teaching and research projects that will be showcased at UCSC's Institute of the Arts and Sciences, an emerging endeavor that harkens to UCSC's roots as an innovative educational experiment meant to blur the lines between disciplines to beautiful effect.

Ever since it opened its doors in 1965, UC Santa Cruz has been a place where seemingly different areas of study can "talk" to each other across the lines, much to the benefit of students and professors alike. This is

a place to explore unexpected convergences between, say, visual arts and astrophysics, and computer games and climatology.

And now, the campus is about to take this kind of dialogue to a whole new level. Planning is underway for the state-of-the-art institute—part museum, part teaching/research facility, performance center, and meeting space, complete with study areas, a café, and the kind of jaw-dropping Monterey Bay views that could make it hard to focus on your lunch.

The planning committee is hashing out the size, shape, and proportions of the new institute, and an architect has not yet been selected.

But here is what we do know: the building will go up somewhere in UCSC's arts complex; there will be thought-provoking exhibitions that are bound to get people talking; there will be dance performances, classes, and student internship and learning opportunities.

Left: 2012–13 Irwin scholars
Ari Finkelstein and Miguel Libarnes

The new institute will be privately funded. It has already received a gift of \$1 million from longtime community and campus philanthropists Rowland and Patricia Rebele.

"When you put an artist and a scientist in the room together, you're going to get an interesting result, because they have different ways of looking at the world," said Patricia Rebele (Porter '88, art history).

CREATIVE ENGAGEMENT

"This speaks to UCSC's institutional history," said Arts Dean David Yager. "A lot of times we talk about the classroom experience and research, but it is equally important to engage students across the university in creative and innovative ways. The institute is about the transformative student experience."

Besides, he said, across-the-lines thinking gets results. "Many problems can be solved by groups of people from multiple disciplines," he said.

Yager visualizes the institute as a place for rigorous intellectual inquiry, a center for research, and an exciting destination for visitors who will be drawn to exhibits that portray complex and provocative subjects in fascinating, visual, and interactive ways.

For example, Yager is already thinking about staging an exhibit on the science and politics of water consumption, bringing together artists, climatologists, and computer scientists.

CAMPUS CATALYST

John Weber, the institute's founding director, emphasized the creative "catalytic role" that faculty will play in germinating institute exhibitions, which will be linked to teaching and learning on campus, offering a series of starting points for student research.

Most recently the director of the Frances Young Tang Teaching Museum and Art

Gallery at Skidmore College, Weber has also put in his time as the curator of education and public programs at the San Francisco Museum of Modern Art. He has a deep well of ideas to draw from, and a strong desire to make the exhibits eye popping and accessible as well as thought provoking.

The exhibitions will be an important focal point for the institute.

"While we do not see this as a collecting institution, we can draw upon the deep and valuable collections owned by the UC Regents, and residing in other UC museums," said Weber.

He also emphasized the institute's system-wide role as a catalyst and collaborator bringing campuses together. And while the exhibits will have an interdisciplinary scope, there will be a strong and consistent focus on visual art.

RESEARCH SHOWCASE

The institute will also host research residencies, and include a seminar space with room for 120 people. UCSC students will benefit by attending classes there, and by using exhibits and holdings as research subjects. They can also take advantage of internship and volunteer opportunities, serve as assistants to curators for exhibit research, work as gallery monitors, and conduct peer tours or lead tours for off-campus groups.

While the institute will bring a new attraction to campus, Weber said it will also help to emphasize the cross-disciplinary learning and research that is already taking place.

"It will highlight exciting work that is going on across the campus, much of it behind closed doors," he said. "If people are visiting campus, and you want to show them this exciting work, here is where you can take them."

PULLING UP CHAIRS

continued from page 18

Now this ambitious project is getting a boost from GIIP Global Advisory Board co-chair Mark Headley (Stevenson '83, politics and economics) and his wife, Christina Pehl. The couple recently made a gift to the program that will establish the Dorothy E. Everett Endowed Chair.

The endowment will support the management, staffing, instruction, and other needs of GIIP, which mentors students in information technology and social entrepreneurship to advance social justice, sustainable development, peace, and gender equity.

Even before his recent gift, Headley was a longstanding GIIP supporter.

INCREASED IMPACT

Philanthropist Jack Baskin has given more than \$10 million to UCSC, including a gift to name the Jack Baskin School of Engineering as well as the Jack Baskin Chair in Computer Engineering.

But the engineering chair, with a gift from Baskin, has grown in value so dramatically that UCSC's engineering department has decided to "split" the chair endowment to increase its impact, effectively creating two chairs for distinguished faculty.

Each chair will have an endowment of nearly \$1 million.

Professor Patrick Mantey, the founding chair of computer engineering and the first dean of engineering at UCSC, says this approach will make maximum use of the endowment's annual disbursement.

"There were enough funds to leverage this gift and achieve even more impact by adding the second chair," Mantey said. "It also gave recognition and encouragement to a second distinguished faculty member in the department."

The endowment supports teaching, research, and service activities. Mantey continues to hold the first chair, and Professor J.J. Garcia-Luna-Aceves now holds the "Computer Engineering II" chair.

—Dan White



Where have all the otters gone?

By Lily Dayton



Sarah Chinn, an intern for the joint UCSC-USGS project featured in this article, tracking sea otters in the Cambria area with a radio receiver and a telescope.

Decimated by the fur trade of past centuries, the southern sea otter population has never fully recovered. UCSC scientists are piecing together the reasons why.

Wildlife biologist Gena Bentall stands on a sandy bluff above the central coast of California, sweeping a radio antenna in a wide arc across the bay. She's trying to catch the signal of a radio-tagged sea otter hidden somewhere amidst the bull kelp that mottles the water's surface. Her receiver emits a "blip-blip," but as quickly as it appears the sound vanishes in the shush of wind.

"This otter is a notorious pain in the rear," jokes Bentall, as the signal returns, then fades away again before she has a chance

to glimpse the animal through her telescope. "Watching day in, day out, you become familiar with each of them. It's really helpful because if you hear a signal, you know where that particular otter tends to forage—so you know where to look."

Except this rambunctious otter has disappeared beneath the water, where her radio signal can't transmit to the surface. So for now, Bentall waits.

An alumna of UCSC's graduate program in ecology and evolutionary biology (EEB),

A community of students, faculty, staff, and graduates committed to the greater good. The bold experiment of UCSC's heritage lives today in its environmental and

social leadership and in its commitment to justice and sustainability that permeates all aspects of work on campus and in the lives of graduates.

Bentall is the team leader on this joint U.S. Geological Survey-UCSC project, trying to tease apart the factors that hinder the recovery of the southern sea otter. The study area encompasses 56 miles of coastline from Piedras Blancas to Oceano Dunes. Bentall and her crew are monitoring 45 animals along this wind-blown stretch of coast, recording what and where they eat, how deep they dive and how far they travel, whether they reproduce, and, if they die, what caused their demise.

Population plunge

Historically, sea otters were plentiful along the entire coast of California, with numbers estimated at 15,000-16,000. After fur hunters depleted them to near extinction in the 18th and 19th centuries, southern sea otters began to recover slowly—though never reaching historical numbers or refilling their former range. When the southern sea otter was listed as a Threatened Subspecies in 1977, the population comprised less than 2,000 animals. Today, the population lingers around 2,800, and otters still haven't regained a foothold south of Point Conception or north of Pigeon Point.

"Between the late 1980s and the present, especially in the central part of the range, the population has not grown appreciably," says Tim Tinker, adjunct professor in UCSC's EEB Department, and principal investigator in the Central Coast study.

Initially, scientists were mystified by the southern sea otter's sluggish recovery. But as they continue to study sea otter biology and the role otters play in their nearshore ecosystem, a clearer picture has begun to emerge—albeit a complex one that involves a multifaceted combination of different factors.

Tinker explains that it all boils down to death rates. Otters in their reproductive prime are dying at a higher rate in the southern sea otter population than in populations that continue to grow. "We know that elevated mortality limits population growth," he says, "but trying to understand the relative importance of the many different sources of mortality is a challenge."

Environmental sentinels

Sea otters are the smallest cold-water marine mammal, which means they're highly susceptible to heat loss in their aquatic environment. In addition, unlike other marine mammals, they lack a layer of blubber to keep them warm. To survive in cold Pacific waters, they rely on their thick fur coat as well as the heat generated from their extremely high metabolism.

"On a mass-specific basis, sea otters have one of the highest metabolic rates of any other marine mammal," explains Nicole Thometz, an EEB Ph.D. candidate who is studying the energetic demands of sea otters. "Adult sea otters must eat 25-30 percent of their body weight in food each day."

Their high caloric need alone causes sea otters to live near the brink of survival. Adding to their vulnerability, sea otters' main food source comes from shellfish-filter feeders that often accumulate marine contaminants.

Melissa Miller, a veterinary pathologist with the state Department of Fish and Wildlife who is affiliated with UCSC's Institute of Marine Sciences, examines virtually every dead otter that gets picked up on California's Central Coast—and a large percentage die from parasites, pathogens, or toxins. Land animals such as cats and opossums often transmit disease to sea otters through waterways that carry their feces. Fueled by agricultural runoff, freshwater algal blooms release toxins into streams that run into the ocean. In many areas, California sea otters carry a high load of industrial pollutants and pesticides in their tissues.

"Otters are the single best environmental sentinel I've ever seen for land to sea pollution," says Miller. Though otters are undoubtedly assaulted by human-caused pollution, most ecologists believe that the high rate of death from infectious disease in the southern sea otter is also the reflection of another underlying problem: otters on the central coast of California are not getting enough food to eat.

"The more data we collect across the population, the clearer we see behaviors that

scream out food limitation," says Bentall. Otters in the densely populated center of the range are scrawnier and spend more time foraging than their more robust counterparts in sparsely populated areas. Many females on the Central Coast die as they wean their pups. Others simply abandon their young, unable to consume enough calories to maintain the elevated energy demands of motherhood.

Living on the edge of what the environment can sustain, southern sea otters are energy-depleted and stressed, and thus more vulnerable to disease, proposes Tinker.

Why not move?

The question is obvious: If sea otters are limited by food in the center of their range, why don't they simply move into the northern and southern peripheries, where otter densities are low and food resources are relatively abundant?

One answer, at least in recent years, is shark bite mortality. Scientists began to notice an increase in shark-bitten sea otters in 2000. By 2010, 20 percent of sea otters found dead on the shore were afflicted by shark wounds. Since then, the rate has grown to 30 percent across the southern sea otter range, with rates as high as 50 percent in the area from Morro Bay to Point Conception.

Sharks aren't actually eating sea otters—they simply taste them, then spit them out. And scientists aren't sure why this behavior is on the rise. Some suggest the population of white sharks has increased, so there is an influx of subadult sharks that haven't yet developed a good search image for the seals and sea lions they prefer. Others suggest sharks have changed their distribution to areas where elephant seals have become more abundant in recent years—the same areas that coincide with a higher incidence of shark-bitten sea otters.

Though shark bite is currently the southern sea otter's single largest cause of mortality, Tinker emphasizes the importance of addressing human-caused stressors, such as pollution, the alteration of natural waterways, and destruction of wetlands—all of which decrease water quality, potentially bringing sea

otters in contact with harmful substances.

"Human-caused factors may not have as big an impact as shark bites, but they are not negligible," he explains. "Combined, they make a substantial contribution to sea otter mortality—and these are factors we can do something about."

Trying to untangle these various stressors and figure out how they inhibit sea otter recovery, Bentall and her team continue to go out day after day, following the study animals

in their nearshore ecosystem.

"Patience and endurance—those are two things that are critical for an otter tracker," says Bentall, bracing herself against the wind that whips up from the bay. "The other critical thing is that you have to really care. Part of what makes you able to watch an otter for six hours is engagement. I've been tracking otters for 12 years and I still get excited to go out and see otters every day." As if on cue, the radio receiver picks up

the signal of the otter she's spent the better part of the morning looking for. Peering into her telescope, she lets out a whoop as the female otter comes into view: The otter successfully weaned her pup—and she's still in good condition.

Bentall's joy is short-lived, however. As soon as she's finished inputting data into her mobile PC, she packs her equipment and heads up the coast, in search of another sea otter.

DEEPER POOLS, DEEPER RESEARCH

Coastal Sustainability is a signature initiative in The Campaign for UC Santa Cruz. Projects include rebuilding and expanding the nearly 35-year-old outdoor marine mammal pools and research facilities at Long Marine Lab. | Plans are being developed and private funding sought for the project, which will allow important new study of dolphins, sea otters, seals, and sea lions such as Ronan, the famous beat-keeping sea lion. | Among improvements: making the pools deeper so marine animals have room to dive—and researchers can study how they do it. | To learn more, call (831) 459-4240, or write to sciences@ucsc.edu.

CO“OTTER”ATIVE RESEARCH The federal agency with primary responsibility for research on threatened sea otter populations is the U.S. Geological Survey's Santa Cruz Field Station, a cooperative unit of UCSC and the USGS based at UCSC's Long Marine Laboratory and run by Tim Tinker, a USGS wildlife biologist, and Jim Estes, professor of ecology and evolutionary biology. | They work closely with a number of partner agencies, including the California Department of Fish and Wildlife (DFW), Monterey Bay Aquarium, UC Davis Veterinary School, and others. Next to Long Marine Lab is the DFW's Marine Wildlife Veterinary Care and Research Center, where wildlife veterinarian Melissa Miller conducts post-mortem examinations of sea otters and other marine wildlife. | The results of this collaborative research are used by the U.S. Fish and Wildlife Service to guide management decisions.

‘I felt a great sense of responsibility’



Carson Watts (Oakes '13, sociology)

Young alum's experience in a Ghanaian slum confirmed his career path of sustainable development

Black smoke from burning e-waste and the acrid smell of sewage filled the air as Carson Watts (Oakes '13, sociology) strode through the slums of Old Fadama in the capital city of Ghana.

Home to nearly 100,000 people, the shantytown is a collection of dusty alleys, wooden shacks, and a sanitation system that consisted of trash haulers and latrine operators dumping their loads of waste into a fetid lagoon at the edge of the slum. A nearby e-waste disposal site was the reason for the black smoke.

Watts, who hopes to get a Ph.D. in sustainable development, was soon talking to residents and government officials in an attempt to understand why such unhealthy conditions existed and what could be done to improve them.

Old Fadama's residents said trash bins and public toilets would solve much of the problem—but the government only wanted the slum to be erased. Make something happen, the residents implored Watts.

"I felt a great sense of responsibility," said the 24-year-old alum, a community college transfer student who went to Ghana through UCSC's Education Abroad Program.

Watts not only wrote his senior thesis from research gathered during the five-month trip but he is also writing a position paper to send to Ghanaian officials outlining what he discovered.

"It was eye-opening to see the poverty there," Watts said of his time in the slums, "but it also confirmed my career path."

One day, Watts hopes to work in the sustainable development field both at home and abroad. He's arranged a future fellowship with the Center for Global, International and Regional Studies, a center for the study of international affairs at UCSC. Meanwhile, he is working for a grassroots campaign that fundraises for environmental and social justice issues.

—Peggy Townsend

Investing in community **Philanthropy Focus**



*Chancellor's
ASSOCIATES*
UC SANTA CRUZ



David Doolin

After moving "over the hill" from Silicon Valley in January, David Doolin wanted to immerse himself in Santa Cruz life and culture.

He holds a firm belief that it's important to be active in the community where you live. Not content just to be a Santa Cruz resident, he wanted to weave himself into its daily fabric.

It didn't take long for Doolin, an accountant, to take a big step. Seeking a meaningful philanthropic endeavor, he joined the Chancellor's Associates at UC Santa Cruz. Money contributed to the fund is unrestricted—meaning the chancellor can use it where it's needed most, giving him flexibility to fund top-priority programs and seize new opportunities as they arise.

These funds have been used across the university to expand the library and enhance its offerings, initiate teaching and

outreach programs, underwrite innovative research projects, and provide career-building internships.

To join Chancellor's Associates, a donor needs to have made gifts of \$1,000 or more to the Chancellor's Associates Fund, the UCSC Fund, or the Parents Fund.

"It's not an overwhelming amount, but it has a very large impact," said Doolin. "You get a big bang for your buck."

Donations to these funds have been used to better serve students and the community, said Elizabeth Cowell, interim university librarian.

"The funds are helping us move forward with our vision," said Cowell. For example, the library used the money to relocate the East Asian collection downstairs, freeing up valuable study space on the entry level.

At the Science & Engineering Library, small renovations enabled by the funds have

made the space more modern and useful. Dry-erase boards have taken the place of old-school chalkboards. A granite desk has found new life as a laptop bar.

"These three things are really making the space better for the students," said Cowell. The community benefits, too—most of the libraries' resources are available to the public.

As a firm believer in public education, Doolin says the Chancellor's Associates program is a perfect way to donate in an impactful way.

"I just want to support a university that's doing important work and making significant advances in research and social spheres," he said. "The chancellor knows where the money is most needed."

—Amy Ettinger



The road to '65

Countdown to UCSC's 50th anniversary



Editor's note: This third installment in our series of stories leading up to a celebration of UCSC's 50th anniversary is about the very early days of the Quarry Amphitheater and the central role the amphitheater has played on campus over the years. Restoring the Quarry Amphitheater is among the priorities of The Campaign for UC Santa Cruz.

Left: Angela Davis speaking in 1978; above: Upper Quarry Amphitheater c. 1965

Quarry revival

On a January day in 1963, then-Campus Engineer Lou Fackler set out with a car full of dignitaries for a tour of what was to be UC's newest campus. But Fackler, who'd been on the job only a week, took a wrong turn and ended up in an abandoned limestone quarry in the upper campus—where his car, and his VIPs, promptly got stuck in the mud.

There's a good chance those sitting in the car that day would have had a hard time envisioning what that ragged hole in the ground would become: an award-winning outdoor amphitheater that has played host to a presidential stump speech by Gov. Jerry Brown, a teach-in featuring former U.S. ambassador Joe Wilson, a talk by Intel CEO Andy Grove, and, for a time, a nude psychology class.

HOT dates

"I think it's beautiful, breathtaking," said Campus Architect Emeritus Frank Zwart (Cowell '71, mathematics) of the amphitheater. "It always reminds you of where you are, surrounded by the campus's natural splendor, its history, and an extraordinary piece of landscape architecture."

The idea that a gaping hole could be recycled into something useful—even beautiful—seems to first have been mentioned in 1962 by pioneering landscape architect Thomas Church, who played a major role in the design of UC Santa Cruz.

It was four years later, however, that Dean McHenry wrote to Church pitching his own ideas for the site. UCSC's first chancellor envisioned concerts, lectures, "pageants and dramas."

Church, apparently busy, turned over design of the site to his longtime colleague, and former UC Berkeley faculty member, Robert Royston.

Royston, one of the most influential landscape architects of his generation, was known for designs that were modern, dynamic, and human-centered. His plans for the amphitheater, which would go on to win an award from the American Society of Landscape Architects, reflected his interest in applying principles of modern art to shaping the landscape.

Sections of seats were angled and asymmetrical, and the space between benches varied from row to row. A boulder was left to rise from one side of the stage, while a stand of Oregon maples rimmed the back of the space. Completed in 1967, the amphitheater cost \$82,600.

Even before the amphitheater was finished, Dean McHenry held his 1966 inauguration there. Ceremonies and commencement exercises (some of them dignified, some not) soon followed. In 1968, honorary doctorates were given there to film director Alfred Hitchcock and musician Ravi Shankar. Activist Angela Davis spoke at a commencement ceremony there in 2003.

Comedian and activist Dick Gregory graced the earthen stage as did Congresswoman Bella Abzug, and author and architect Buckminster Fuller.

In 2001, the mournful notes of a violin drifted in the air as mourners hung messages from ribbons in the wake of the Sept. 11 attacks.

There were protest rallies and teach-ins—and a noteworthy class taught there by pioneer Professor of Psychology Michael Kahn. Kahn's free-flowing talks on topics from

Carlos Castaneda to Sigmund Freud were accompanied by music and, on sunny days, nude sunbathing by some students. The class became known as "Suntan Psych."

Closed in 2006 because of safety concerns and lack of funding for repairs, the amphitheater is now populated by weeds, skittering grey-brown lizards—and the echo of memories.

Reopening the Quarry Amphitheater is among the priorities of The Campaign for UC Santa Cruz.

Getting ready for UCSC's "Big 5-0"

To mark UC Santa Cruz's upcoming 50th anniversary, the campus and its friends will reflect on and celebrate UCSC's history and achievements, as well as illuminate its future.

UCSC opened for classes in fall 1965, with its first full academic year 1965–66. Therefore, the campus has established an 18-month period for "official" anniversary activities, beginning in January 2015 and ending in June 2016, which marks the end of the complete 50th academic year.

Chancellor George Blumenthal has formed a 50th Anniversary Leadership Committee of distinguished alumni and thought-leaders to assist in presenting a thoughtful and meaningful series of events, projects, and celebrations to mark this wonderful milestone.

The committee's first meeting was held on October 18.

Committee members to date include:

John Laird, Chair
Hilary Bryant
Fernanda Coppel
James Datri
Charlie Eadie
Reyna Grande
David Graves
James Gunderson
Paul Hall
Teri Jackson
Gail Michaelis-Ow
Ezequiel Olvera Jr.
Julie Packard
Jock Reynolds
Nikki Silva
Alec Webster
Lisa Witter
Michael Woo
Ron Yerxa

Help us plan the celebration!
For information, visit 50years.ucsc.edu.

Founders Celebration 2013

ucsc.edu-founders

October 18, 2013

Founders Celebration 2013 Honorees

FOUNDATION MEDAL

Frank Gehry,
world-famous architect

FIAT LUX AWARD

Don & Diane Cooley, long-time
UCSC advocates and supporters

ALUMNI ACHIEVEMENT AWARD

Jock Reynolds, artist,
Yale University Art Gallery director

FACULTY RESEARCH LECTURERS

Howard Haber and Abraham Seiden, physics professors

Maitra Lecture

December 5, 2013

Peter Sellars, renowned theater, opera, and festival director

Faculty Research Lecture

February 11, 2014

Howard Haber and Abraham Seiden, physics professors

Martin Luther King Jr. Convocation

events.ucsc.edu/mlk

Date TBD

Scholarship Benefit Dinner

events.ucsc.edu/sbd

Now part of Alumni Weekend

April 25, 2014 New date!

Alumni Weekend 2014

April 25, 26, and 27, 2014

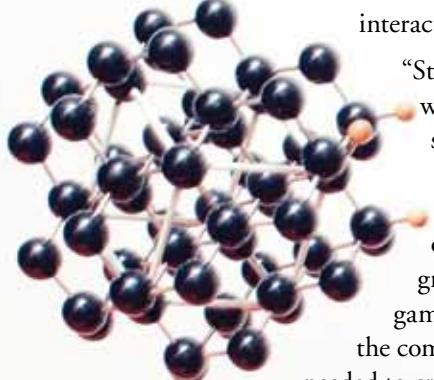
For more events, visit: events.ucsc.edu

This is UCSC

Making game makers

UCSC has established a new master's (M.S.) degree program in games and playable media offered from the UCSC Silicon Valley site in Santa Clara.

The 12-month professional degree program, administered by the Department of Computer Science in the Baskin School of Engineering, will give students a strong background in advanced technologies used in the development of computer games and other interactive media.



"Students will develop strong design skills as well as strong technical implementation skills," said Jim Whitehead, professor and chair of computer science. "They will learn to be independent game makers, and they can go on to work in the game industry or for the growing number of companies outside the game industry that are looking for people with the combination of technical and design skills needed to create compelling interactive experiences."

The new degree program builds on UCSC's strength as a leading center for computer game research and education.



Students in the new master's degree program will learn all aspects of game development.

Find more UCSC news at news.ucsc.edu.
Have news delivered straight to your inbox! Subscribe to the UCSC e-newsletter or news by subject at news.ucsc.edu/subscribe.

Baskin
Engineering
UC SANTA CRUZ

\$300K grant for language study

UCSC humanities professors Sandra Chung and Matthew Wagers have been awarded a \$300,000 grant from the National Science Foundation to investigate language comprehension in the Mariana Islands.

The project will focus on the study of Chamorro, an Austronesian language of Micronesia, spoken by 45,000 people in the Mariana Islands, which are part of the U.S. and its possessions.

The project for the 2013 NSF grant is intended to broaden the empirical base of research on language comprehension.

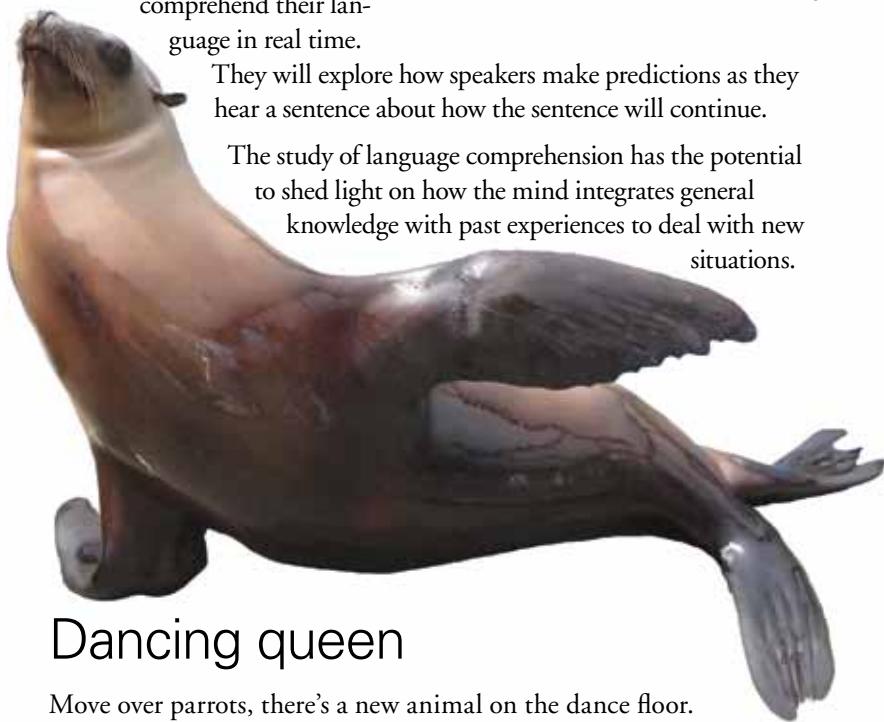
The UCSC professors will undertake experimental studies that build on special linguistic features of Chamorro to uncover how Chamorro speakers comprehend their language in real time.

They will explore how speakers make predictions as they hear a sentence about how the sentence will continue.

The study of language comprehension has the potential to shed light on how the mind integrates general knowledge with past experiences to deal with new situations.



UCSC humanities professors Matthew Wagers (left) and Sandra Chung (center), with author and educator Manuel F. Borja



Dancing queen

Move over parrots, there's a new animal on the dance floor. Her name is Ronan, and she's a California sea lion at Long Marine Lab. Scientists at the lab trained Ronan to bob her head in time with rhythmic sounds, then showed that she could transfer this skill to tempos and music she hadn't heard before.

Ronan is the first non-human mammal convincingly shown to be able to keep the beat. Scientists call it "rhythmic entrainment," and aside from humans it was previously seen only in parrots and other birds with a talent for vocal mimicry.

Ronan's sense of rhythm undercuts an increasingly influential theory that beat keeping requires a capacity for complex vocal learning, according to Peter Cook, a graduate student in psychology and first author of the study, published in April in the *Journal of Comparative Psychology*.

Ronan's favorite tune appears to be Earth Wind & Fire's "Boogie Wonderland." To see the video, search "Ronan sea lion" on YouTube.



Dead art comes alive at new exhibit

The second annual exhibition of The Grateful Dead Archive is now open to the public at UCSC's McHenry Library.

Songs of Our Own: The Art of the

Grateful Dead Phenomenon features more than 158 primary works, plus 110 digital images, with signature pieces by band members Jerry Garcia, Mickey Hart, and Bill Kreutzmann, as well as works from numerous Deadhead artists.

The exhibition is curated by UCSC's Grateful Dead Archivist Nicholas Meriwether.

Documenting the extraordinary art that celebrates the band, the works range from Garcia's student days at the California School of Fine Arts, to the poster renaissance of Haight-Ashbury in the 1960s, to the increasingly sophisticated art created by both fans and band members over the past four decades.

¡Qué bien! New Spanish studies degree

Beginning this fall, students at UC Santa Cruz can now declare a major in Spanish studies, leading to a new bachelor of arts degree.

Administered by UCSC's Language Program in the Humanities Division, the faculty affiliated with the major will come from 10 departments across three divisions.

The interdisciplinary major in Spanish studies is designed to offer students the linguistic competence and cultural literacy required to understand the perspectives of diverse Spanish-speaking communities.

The major will help students gain a broad understanding of the historical and cultural developments of the countries in which Spanish is a national language, as well as those regions in which Spanish is employed in contact with other languages.

The Farm grows

The UC Santa Cruz Farm sprouted a new fence line this spring. Looking west from Coolidge Drive, new deer fencing is visible surrounding the “hay barn” field, a three-acre addition to the Farm’s existing 25 acres.

Combined with the “lower quarry” field, bordered by the bike path and Hagar Drive, the Center for Agroecology & Sustainable Food Systems (CASFS) is adding five new acres for organic farming, research, and training.

“Five acres may not sound like much, but that’s about a third again as much land as we are actively cultivating down on the Farm,” said CASFS Executive Director Daniel Press. “This acreage will allow us to dedicate the existing fields for production while we try out new crops and research and teaching techniques on the new fields.”

Cover coup

As a kid growing up in Vermont, Rob Irion would snuggle into his father’s recliner and pore through the pages of *National Geographic* magazine. He’d marvel at stories of exploration and scientific achievement, and dream that, one day, he’d see his own name on the cover of the venerable magazine. Forty years later, Irion’s dream came true. The director of UC Santa Cruz’s Science Communication Program saw his 18-page article on the violent origins of our solar system grace the cover of the July 2013 issue of *National Geographic*.

It’s an achievement Irion—who has penned stories for *Discover*, *Smithsonian*, *New Scientist*, and *Sky & Telescope* magazines, among others—calls the pinnacle of his career.



Left: Emerson Glassey (biochemistry and molecular biology major, bioinformatics minor); above left: Farm apprentices harvesting in July

Finding the correlations

Emerson Glassey was only 16 when he arrived on the UC Santa Cruz campus. He’d finished high school in two years, gone to junior college, and begun looking for a university to attend. Despite a stack of applications, however, only UC Berkeley and UCSC accepted the teen. UCSC was his pick. Other schools’ rejections were UCSC’s gain. The 19-year-old, who gradu-

ated this year, completed a project with UCSC Assistant Professor of Chemistry Roger Linington that may change the way researchers discover compounds in marine bacteria for use in the development of new drugs.

The biochemistry and molecular biology major, and bioinformatics minor, has his eye on research and teaching at a university some day.

Child's play = new research

Standing in the colorful toddler room of UC Santa Cruz's Early Childhood Education Center, a small girl discovers a view of her elbow in a pink hand mirror. Her brow furrows as she studies the previously unexamined joint. She turns the mirror toward her toes, then her knees—and breaks into a grin.

Below: The new child-study room allows developmental psychology students a place to practice scientific observation.

It's one of those wonderful moments in childhood development that might have gone unnoticed—except for a new child-study observation room installed last year at UCSC's busy Early Childhood Education Center as part of a \$165,000 grant from the Claire Giannini Fund.

The room, remodeled at a cost of \$30,000, not only allows UCSC ad-

vanced developmental psychology students a place to readily practice scientific observation but also lets Early Childhood Education Center staff hone their skills, permits parents to observe their children, and facilitates faculty research.

"It's a bridge to research and teaching," says Early Education Services Director Sohyla Fathi.



Above: Paul Houghtaling, a wildlife biologist with the UC Santa Cruz Puma Project, holds a young mountain lion's head up after the animal was tranquilized in a downtown aqueduct.

Partnership protects puma

The capture in downtown Santa Cruz and resettlement of a young male mountain lion in May is one of the first tests of a new state policy that calls for using non-lethal methods when mountain lions are discovered in populated areas.

It was a good example of cooperation between police, the California Department of Fish and Wildlife, researchers at UC Santa Cruz, and other agencies and organi-

zations, said Chris Wilmers, associate professor of environmental studies at UCSC.

"It worked out well; it was a good way to handle the problem without having to shoot the animal," said Wilmers, who heads the UC Santa Cruz Puma Project—a study that captures mountain lions in the Santa Cruz Mountains and releases them with collars that record and transmit their movements.

Previous cases when police or game wardens shot and killed lions who wandered into residential areas prompted outcries and led to a new policy.

Police and wildlife officials called Wilmers and his UCSC colleagues, along with Wildlife Emergency Services, a Moss Landing nonprofit, after the young lion was discovered in a concrete aqueduct near a busy Santa Cruz intersection.

Alumni Notes

Network with other Banana Slugs,
keep getting *UCSC Review*, and more!
Join the Alumni Association: alumni.ucsc.edu

We'd like to hear from you. ► Send us a note—email review@ucsc.edu or visit alumni.ucsc.edu

► Get news—monthly e-newsletter: news.ucsc.edu/newsletter; Facebook: facebook.com/ucsantacruz

COWELL COLLEGE

'69 Dean DAVIS is teaming up with two young pastors to plant Mercy Hill Church in Santa Rosa. He continues to write and speak for Come Let Us Reason, a Bible teaching ministry specializing in Apologetics and Worldview Studies. His book on biblical eschatology (*The High King of Heaven*) will be out this winter. He also works with his wife **Linda (LUDER, Crown '69)** at Juvenile Hall.

'70 Sandra KATZMAN's award-winning HondaJet news story (www.usjinnovate.org/untold-story) was published. The award is for "Untold Stories in Innovations" and is sponsored by the Japan-US Foundation and Stanford University.

'71 James GRAHAM was appointed pastor of St. Joseph Melkite Catholic Church in Lansing, Mich., in March after 17 years as pastor of St. Elias Melkite Catholic Church in San Jose. It's a long way from the mountains, redwoods, ocean (and wineries!), but the congregation has given him a warm welcome. He also copy edits the Melkite Church's national journal, Sophia.

'77 Lisa GIMMY recently celebrated the 20th anniversary of her firm, Lisa Gimmy Landscape Architecture. LGLA's landscape design for two Southern California homes was recently profiled in the *New York Times* article "Let California Be California."

'79 Rebecca (LAFONTAINE) Larivee graduated with a master's degree from Cambridge University in archaeology and worked several years in that field. She returned to school in 1989 to receive a second masters in social work, and is employed as a mental health therapist in the Four Corners region of New Mexico. For recreation, she enjoys Goat Valley Farms—her home and hobby farm.

'84 Michael BEE is a captain in the U.S. Coast Guard and serves as deputy director of the National Maritime Intelligence-Integration

Office in Washington, D.C.

'90 Alex D. NOVACK earned his Ph.D. in philosophy from Arizona State University.

'01 James CISNEROS received his masters degree in business management and owns/operates/runs/walks A Tired Dog is a Happy Dog in Coos Bay, Ore. He and **Alexia VALDES ('05)** have been married for seven years.

'04 Heather BAILIE graduated from the California Culinary Academy in '06 and worked in Michelin one-star restaurants before changing course to learn butchery and charcuterie. She is the partner/director of operations of Fatted Calf Charcuterie, teaches a series of all-women butchery classes, and is anticipating the release of their cookbook *In the Charcuterie: Fatted Calf's Guide to Making Sausage, Salumi, Pates, Roasts, Confits, and Other Meaty Goods*.

'05 Alexia VALDES received her MFA in creative writing at Otis College of Art and Design in LA. She teaches writing at Oregon Coast Culinary Institute. She and **James CISNEROS ('01)** have been married for seven years.

STEVENSON COLLEGE

'68 Raymond STEINER and his wife, Yumi, recently relocated to Honolulu.

'73 Charles A. PERRONE enjoyed his fourth sabbatical at the University of Florida completing a third edition of the Portuguese reader *Crônicas Brasileiras*. In 2010 he published Brazil, Lyric, and the Americas, also by the University Press of Florida.

'75 Lee COLLINS' daughter now attends UCSC, so she has the opportunity to visit the site of so many memories. She is the senior county social services director in California and has served for 30 years. She lives in San Luis Obispo County and is married to her wonderful Anne.

'76 Elaine DRAPER, Ph.D., J.D. was promoted to professor of sociology and directs the Law and Society Program at

California State University, Los Angeles. She received the NSS-ASI Outstanding Faculty Achievement Award from students and her university.

'77 Susan GIBBONS works as a refugee officer for U.S. Citizenship & Immigration Services at headquarters in Washington, D.C. She was previously an adjudications officer at U.S. Embassy Moscow, Russia.

'79 Wendy WEISS is a licensed acupuncturist and lives in Lake County, California.

'82 Terry WEINER has traded his galoshes and umbrella for cowboy boots and a big belt buckle after accepting the position of Ellensburg city attorney in beautiful central Washington after 30 wonderful years in the Portland-Vancouver area.

'83 Rayme WATERS's debut novel, *The Angels' Share*, was published by Winter Goose in 2012.

'93 Melissa Z. SAVLOV received her master's degree in sociology from UC Riverside in 2012. She expects to earn her Ph.D. from UCR in 2015.

'95 Karin SCHINDEHUELLE, who came from Germany to take part in UCSC's EAP in '95-'96, is working as a biologist in Duesseldorf, Germany.

'96 Sarah WAGER, senior counsel for San Jose trial firm McManis Faulkner, was named to the Northern California Super Lawyers 2013 Edition—Rising Stars.

'04 Tyler ATKINSON, associate for San Jose trial firm McManis Faulkner, was named to the Northern California Super Lawyers 2013 Edition—Rising Stars.

CROWN COLLEGE

'74 Michael S. BROWN was recently appointed by Gov. Jerry Brown as a public member to the California Ocean Protection Council. His youngest son, Josh, is a third year Banana

Slug majoring in Earth sciences and teaching surf classes in the recreation department.

'89 Clarence LOW was named one of Colorado's 2013 Asian American Heroes.

'93 Neal COLWELL, RCE, was recently promoted to principal and partner in the firm Kjeldsen, Sinnock & Neudeck, Inc. of Stockton and West Sacramento. He will manage the firm's new West Sacramento office in its civil engineering and land surveying services to public and private clients.

'11 Melissa MELOY was chosen to receive a five-year teaching fellowship from the Knowles Science Teaching Foundation.

MERRILL COLLEGE

'71 Craig BELES was named a Fulbright Scholar in 2010 at age 60. He taught international dispute resolution and comparative ADR in the Czech Republic. And in April, he was awarded a five-year appointment to the Fulbright Specialist Roster with a specialty in "International ADR." He works as an arbitrator and mediator in Seattle, Wash.

'77 Thomas Scott TENNEY is a semi-retired teacher living in Santa Cruz. He helped write a book about the late Professor Bhawan Lal Joshi. Sales of the book are used for scholarships for students in Nepal.

'93 Nic KLAR packed up and moved this summer to beautiful Myoko Kogen in the Japan Alps after many years in education across four different countries. He invites old fellow Slugs who are in or traveling to Japan to look him up or check out <http://myoko-nagano.com>. **Christopher SHEIN** teaches permaculture at Merritt Community College, where he helped develop the award-winning student farm. Shein also owns Wildheart Gardens, a permaculture landscape business that designs and builds sustainable gardens. He has published his first book, *The Vegetable Gardener's Guide to Permaculture*.

'97 Robert TERANISHI was appointed as the inaugural holder of the Morgan and Helen Chu Endowed Chair in Asian American Studies at UCLA, effective fall 2013, along with his appointment as Professor of Education in the Graduate School of Education and Information Studies.

PORTER COLLEGE

'71 Roger LEBOW is still teaching cello at Pomona College and playing for LA Opera and various solo and chamber music projects. He and Wendy Schorr celebrated their 30th anniversary June 12. Wendy works for Pasadena Library. They live in Sierra Madre. Their son Theo, 27, is a tenor based in NYC.

'73 Jim HULL's novel *The Vampire in Free Fall* is now an audiobook at Audible.com. Jim teaches classes at Braille Institute in Los Angeles. **Patty (PARKER) MILICH** has been named the programs officer for the California Arts Council. She has been at the state agency for 24 years.

'74 Eric HAMBURG has published a new book, *Give Peace A Chance*, co-authored with David Hamburg. They recently gave presentations on the book at the United Nations in New York, and at the Kennedy School of Government at Harvard. **Lisa JENSEN's** fantasy novel, *Alias Hook*, was published in May by Snowbooks in the UK. Plans are under way for a U.S. edition due out early in 2014.

'76 Joan JUSTER's award-winning documentary film, *Alaska Far Away*, was picked up by American Public Television and broadcast on stations nationwide this year.

'79 Judy SILK re-entered the rat race as bookkeeper for a music video production company after eighteen years as an experience curator. She is still writing blogs for the Huffington Post and still married to fellow Slug **Dan COGAN** (Porter '83), who recently retired from the law. They live in Pacific Palisades with their three daughters.

'93 Hilary (SHUMAN) BRYANT is currently the mayor of the City of Santa Cruz. Other recent accolades include Santa Cruz Chamber of Commerce Woman of the Year, and past president of Santa Cruz Sunrise Rotary. She lives in Santa Cruz with her husband **David SHUMAN** (Oakes '89), two children, and dog, Darwin.

'01 Joseph DEPAGE recently married his fiancée, Anne, at Holy Cross Catholic Church in Santa Cruz. The reception (quite appropriately) was on the patio of the Porter Dining Hall. They had a piñata. **Zach FRIEND** is a policy, public affairs, and communications expert who has worked on two presidential campaigns. His new book, *On Message: How A Compelling Narrative Will Make Your Organization Succeed*, is a how-to for building a powerful, emotional narrative.

'02 Brandon BIRD has been a practicing artist for the last 10 years or so. His first book of art, *Brandon Bird's Astonishing World of Art*, was released nationwide this fall through Chronicle Books.

'10 Scott JORGENSEN served as an agriculture volunteer with the U.S. Peace Corps in the Gambia and came back to California to become a beekeeper. He is launching into local farming as his main vocation and is seeking to establish a bee yard at a community garden (www.kickstarter.com/projects/625857222/beehives-for-the-hercules-community-garden).

KRESGE COLLEGE

'81 Catherine JUDD received her masters in comparative literature in '86 and her Ph.D. in English literature in '91, both from UC Berkeley, and is an associate professor in the English Department at the University of Miami. She has written a book on Victorian nursing and articles on 19th-century topics. She has a 16-year-old daughter, Helena, and a 10-year-old son, Jack. She can be reached at c.judd@miami.edu.

OAKES COLLEGE

'96 Darrick SMITH recently joined the faculty at the University of San Francisco as an assistant professor of educational leadership after spending 16 years as a teacher and administrator in the Bay Area.

'04 Nathan OKELBERRY joined Fisher & Phillips LLP as an associate in the firm's L.A. labor and employment practice. Okelberry was previously with Vanderford & Ruiz LLP and has extensive trial and litigation experience. He attended Pepperdine University School of Law. He lives in Pasadena.

'12 Diana HERNANDEZ is a full-time residential eating disorder counselor for teens.

COLLEGE EIGHT

'77 Steven M. WOLOCK, an attorney at Maddin, Hauser, Wartell, Roth & Heller in Southfield, Mich., was selected for inclusion in the 20th edition of *The Best Lawyers in America* 2014.

'90 Jane CAVANAUGH is a trainer and coach who guides professionals in developing their business leadership skills and career path. Her new program is called *The Passionate Professional: How to Make Your Ordinary Career Extraordinary* (www.janelevanaugh.com).

'98 Beth LOVE graduated in May from Pacific School of Religion with a master of divinity degree. She was ordained on September 28, 2013, at Inner Light Ministries in Soquel, Calif.

'05 Kiernan GORDON graduated in May from the Ohio State University with a Ph.D. in the sociocultural aspects of sport. He recently joined the Sport Leadership and Management faculty at Miami University in Oxford, Ohio. **Virginia JAMESON** is studying in Costa Rica, working on dual master's degrees in international affairs and natural resources and sustainable development through American University in Washington, D.C.,

which is partnered with the United Nations-mandated Universidad para la Paz. Her studies have focused on the political ecology of food and agriculture, and climate change.

'09 Lyndsey WILLIAMS recently joined Lucas Public Affairs, a Sacramento-based public affairs firm, as executive assistant.

COLLEGE NINE

'02 Sara SWENSON is excited to be part of the new collaborative/sharing economy. She is the COO of a new startup, Boatbound.co, the first nationwide "pier-to-pier" boat rental marketplace. Sara was active at the UCSC boat dock as a member on the sailing team and summer sailing instructor.

GRADUATE STUDIES

'12 Rick BARLOW was chosen to receive a five-year teaching fellowship from the Knowles Science Teaching Foundation.

IN MEMORIAM

'75 Emeryson Layman PERRIATT (Merrill) lived in Santa Cruz for 25 years, where he operated a group home for disabled adults. He also traveled the world and used the islands of Barbados and St. Lucia for his water sport businesses. He loved horses, and he became a skilled international polo player, earning a spot on the American National Polocrosse Team. He lived in Las Vegas and Mexico with wife Michele.

'13 Shayne Marie COPPEDGE suffered a pulmonary embolism and died unexpectedly on July 3. Coppedge became a legal secretary after high school. After many years in the legal world, she longed to do something more meaningful. She decided to go to college and study biology, with the goal of becoming a field biologist or working in conservation. She graduated from UC Santa Cruz just two weeks before her death.



Where's Sammy?

Congrats go out to Elaine Murphy, who found Sammy on page 14 in the spring 2013 Review! Sammy is perched on the top left corner of the ceiling robot prototype in the photo accompanying the story. | Murphy met her husband, Tom, in the fall of 1969 at the chancellor's reception for incoming students. "He was in the dorm next door at Crown College," wrote Murphy. "We were among the first group of couples in the Married Student Housing, where we welcomed our first child, Sean, in March 1971." The Murphys have five children, two of whom attended UCSC. | Who's game to find Sammy again? He's slithered into a cool, dark corner somewhere in this issue ... first responder gets a shout-out in the next Review.

| Go Banana Slugs!

"Being creative comes from your heart, your spirit, and your soul. The eyes inside me see beyond my fingertips."

Caitlin Hernandez:

Musical vision



Caitlin Hernandez was auditioning to be in a movie when she got an unexpected break: A Los Angeles director commissioned her to write and star in her own show.

She dusted off a short story she wrote in high school and transformed it into a musical titled *Dreaming in Color*, which debuted to sold-out crowds at the Promenade Theatre in Santa Monica in July.

Hernandez (Cowell '12, literature) has been blind since birth. The musical, which looks at the challenges of blindness, is not autobiographical. But Hernandez said the play does tap into certain themes she's lived with her whole life. The daily struggles are challenges she shares with many of her blind peers.

"Blindness experiences are very universal," said Hernandez. "For instance, crossing the street on your own. No matter how many times you do that, it's always really scary."

The main character, Brenna, is a 16-year-old artist who is blinded in a car accident, and must learn to adapt to her new life.

For the first scene of the play, Hernandez had to play Brenna before she loses her sight. She relied on sound cues that the audience would never notice. For example, if another actor set down a cup in the living room, that was her prompt to the stage.

"We had to drill it so it was muscle memory," Hernandez said. "It had to look convincing."

Heartened by the play's success, Hernandez is brainstorming new ideas, and would like to continue working with Greg Shane, artistic director and co-founder of nonprofit arts organization CRE Outreach, the country's only acting company made up of all blind actors.

Writing and starring in the musical was part of Hernandez's "gap year"—time out between life stages. Acting and singing have been part of her life since elementary school, but eventually she wants to teach children with disabilities and has already applied to graduate school.

Dreaming in Color received several rave reviews, including one from Huffington Post blogger Jill Robinson, who wrote:

"As Caitlin tells us through Brenna, 'Being creative comes from your heart, your spirit, and your soul. The eyes inside me see beyond my fingertips.' This, of course, is the wonder which Caitlin, in her brilliance, teaches us in *Dreaming in Color*."

—Amy Ettinger

"UCSC reinforced in me an impulse not to accept the status quo and to question the rules of the game."

Marc Shaffer: Seeing unconventionally

Marc Shaffer makes movies that challenge our assumptions about the world. His documentaries explore button-pushing issues ranging from immigration, drugs, and gangs to the destruction of our waterways.

Shaffer's latest film, *American Jerusalem: Jews and the Making of San Francisco*, looks at the largely unknown history of a group of immigrants who helped create a vibrant city.

The subject was a departure from his award-winning investigative work. But as a Jew who grew up in Berkeley, Shaffer (Stevenson '86, American studies) felt a deep connection to the subject matter.

"I'm always looking to broaden my creative experience as a filmmaker," said Shaffer. "I'd always wanted to make a historical film. I had never taken the time to dive into that challenging, uncertain process."

Shaffer is mostly a self-taught filmmaker. After graduating from UC Santa Cruz, he moved to Washington, D.C., and landed a job in television working

on a debate show hosted by Harvard law professor Arthur Miller.

"I was intrigued by the power of the media," he said. "I didn't know about working with film, or telling stories. The show was about getting people in a room to argue about politics. That, I could do."

Shaffer went on to work on a string of CBS News programs before making independent television documentaries for PBS, National Geographic, and others.

Shaffer credits his time at UC Santa Cruz with shaping his life as an investigative journalist. "It reinforced in me an impulse not to accept the status quo and to question the rules of the game," said Shaffer.

American Jerusalem: Jews and the Making of San Francisco debuted to a sold-out house at the Castro Theatre in July. It will screen in film festivals around the world and air on San Francisco's KQED and other public television stations.

Shaffer is now working on an investi-

gative documentary for the Al Jazeera Media Network. He's also preparing a feature-length documentary on Eadweard Muybridge, the iconic 19th-century San Francisco photographer.

Regardless of the story, Shaffer said he's always looking to challenge the conventional way of seeing things, and believes that's a fundamental tenet of filmmaking.

Said Shaffer, "My aim is to open people's eyes to see the world more accurately."

—Amy Ettinger



C E L E B R A T I O N S



More than 1,000 Banana Slugs celebrated **ALUMNI WEEKEND** in April, coming back to campus for an all-alumni lunch, "Teach-Ins," concerts, wine tasting, walking tours, and much more.



ALUMNI WEEKEND PHOTOS BY TERRY WAY / REDWOOD PHOTO BY ULYANA ZAGURSKA

SAVE THE DATE! ALUMNI WEEKEND 2014 will be April 25, 26, and 27 and will include Scholarship Benefit Dinner on a new date: April 25.



“A society grows great when old men plant trees whose shade they know they shall never sit in.”

—GREEK PROVERB

Consider:

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