UC SANTA CRUZ

REVIEW

Spring 2009

inventing a greener future

Game, Match, Love

"I support UCSC's tennis program because it's an important part of the school's excellence—talented scholar athletes and dedicated coaches who year after year achieve national success.

All of UCSC's teams help attract great students to the school and enrich campus life. Athletics deserves strong alumni support."

—Philip McLeod (Merrill '76)

Pictured (l–r) are men's tennis coach Bob Hansen, alumnus and athletics donor Philip McLeod, women's tennis coach Erin Ness (College Eight '06), and scholar-athlete Brandt Bates.

To support UCSC athletics, please go to
review.ucsc.edu/giving
or contact khughes@ucsc.edu

UC SANTA CRUZ

REVIEW
Spring 2009

The Spring 2009 *Review* contemplates the timely topic of sustaining…**ourselves**…the **food** we eat…the **energy** we use…our **campus**…our **planet**.

UNIVERSITY OF CALIFORNIA
SANTA CRUZ

Chancellor
George R. Blumenthal

Vice Chancellor, University Relations
Donna Murphy

UC SANTA CRUZ REVIEW
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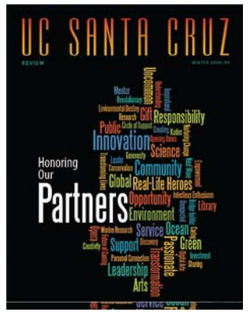
A sampling of reader reaction to recent issues of the UC Santa Cruz *Review*.
E-mail us at review@ucsc.edu.



NOTES & ERRATA: Review *neglected to credit worldle.net in the winter 2008–09 issue (pictured). We used the online application to create the word collage that formed the basis of that issue's cover design. We regret the omission.*

DWINDLING OIL

I hope you were serious when you asked what we think the new president should do ("Mr. President …," fall 2008).

I was pleased with the thoughtful advice the faculty members offered our new president, but I was dismayed that none of them mentioned the main crisis facing the new administration: What to do about waning global petroleum resources. Why is no one talking about this?

Here would be my advice to the new president: Come clean with all Americans. Admit that we are in a period of declining oil resources, and technology in and of itself will not save us. Admit that our standard of living cannot be sustained, and admit that global population growth is out of control. Then start looking for alternative energy sources and the technology that will give us access to them, not to expand or even maintain our living standard but to bridge the transition period to a lower, sustainable standard.

—James Pesout
Father of Trevor, '10, and Sarah Pesout, '12

REFLECTIONS ON KAPANY

I enjoyed reading the story "Celebrating innovation, ideas, and ideals" (winter 2008–09). I completed a course taught by Narinder Kapany during the winter quarter of 1980 at UC Santa Cruz. This economics course provided insight into the innovation and entrepreneurial processes for students contemplating careers in the business or technical sector. We also learned about "total internal reflection," the scientific concept that made Kapany famous for his research that demonstrated light could be passed through bent optical fibers without any loss of transmission.

—Paris Everett Merriam
College Eight, '81

YOU SAY YOU WANT A REVOLUTION

Millions and millions of dollars…from wealthy donors to UCSC.

Why doesn't UCSC funnel some of those millions you receive and build an Earth center on the campus? So we can save (what's left of) our planet!

It's time for a global green revolution.

—Steve Jones
College Eight, '84

SAVE THE BARN

Is there a plan to demolish the barn at the entrance to the campus? That is what seems implied in the story of Sam the goat in the winter 2008–09 issue ("Your Turn").

I think that historic buildings like the remains of the Cowell Ranch give a three-dimensional picture of history. By preserving them we understand better where we are and where we are going.

—Tom Fagan
Porter, '78


BENÉE FLOWER (CROWN '79)

ED. NOTE: *The letter writer simply meant that time and the elements are taking their toll on the barn, not that there's any plan to tear it down. However, a new group on campus, Friends of the Cowell Lime Works Historic District* (limeworks.ucsc.edu), *is working to restore the buildings in the historic lime-producing area near the base of campus.*

We welcome your letters and reserve the right to select and edit for space.

April

ANNUAL REUNION WEEKEND

In today's economy, it may well be time to do some career networking and make new contacts. At this year's reunion, you can do both, plus see old friends and learn how you and UCSC can help shape a better world.

UCSC Reunion is April 24–26. See the complete lineup of events and register at **www.review.ucsc.edu/alumni.**

Events include:

- Robert F. Kennedy Jr. speaking on "Our Environmental Destiny"
- All-alumni picnic lunch, featuring alumni-crafted wines and beers
- Young alumni party
- '04, '99, '94, '89, '84, '79, and '74 class reunions, and the pioneer class 40th anniversary celebration
- A variety of campus tours
- College receptions
- Presentation of the Alumni Association's teaching and staff awards (see page 6)
- Intellectual forum panel discussion: "Shaping Our Environmental Destiny"


MATT FITT

UCSC reunions draw hundreds of alumni. Sign up for the 2009 reunion online.

- Soccer games of alumni vs. students
- Annual meeting of the Alumni Association

Stay connected with UCSC and alumni—update your e-mail. It's easy and fast at **review.ucsc.edu/alumni**.

Garrison Keillor

May

GARRISON KEILLOR

Two million Americans tune in weekly to their local NPR stations to listen to *A Prairie Home Companion* and are transported to Lake Wobegon through the wise reflections of radio personality Garrison Keillor and his understated commentary on human nature. The charming, witty, and always entertaining author and humorist comes to Santa Cruz in a one-man show, on Wednesday, May 13, at 7:30 P.M. at the Santa Cruz Civic Auditorium. Go to **www.santacruztickets.com** or call (831) 459-2159 for tickets.

Summer

SHAKESPEARE SANTA CRUZ

Politics, power, trust—these are the themes explored in the three plays selected for the 2009 Shakespeare Santa Cruz season by artistic director Marco Barricelli.

SSC will present two contrasting plays by William Shakespeare in the outdoor Sinsheimer-Stanley Glen: the ethereal, fantastical comedy *A Midsummer Night's Dream* and the edgy, political tragedy *Julius Caesar.*

The indoor Theater Arts Mainstage will be the venue for the Bay Area première of the family-friendly *Shipwrecked! An Entertainment—The Amazing Adventures of Louis de Rougemont (as Told by Himself)* by Pulitzer-prize winning playwright Donald Margulies. Subscriptions and single tickets for the 2009 season are on sale now.

For more information, visit SSC on the web at **www.shakespearesantacruz.org** or call the UC Santa Cruz Ticket Office at (831) 459-2159.


R. R. JONES

Stephen Bel Davies (Mercutio), Charles Pasternak (Romeo), and Erik Hellman (Benvolio) in SSC's 2008 production of *Romeo and Juliet.*

Eight Slugs win Fulbright grants

UC Santa Cruz had eight Fulbright Program grantees in 2007–08—a feat it's only accomplished twice before in the past 15 years, and a higher ratio of accepted candidates versus applicants than many prominent private universities.

The eight Fulbrighters are **Elizabeth Bastiaans,** who is studying a threatened lizard in Mexico; **Frank Black,** who is measuring mercury levels in water, fish, and hair of subsistence fishermen in Botswana; **James Casey,** who is conducting research on early 20th century Arab newspapers in Syria; **Timothy Krupnik,** who is researching farming systems to improve rice production and natural resource conservation in Senegal; **Michelle Olsgard,** who is investigating the sustainability of a fungus important to Chinese traditional medicine on the Tibetan Plateau; **Elizabeth Orr,** who is studying the impact of global warming on insect populations in Sweden; **Leah Samberg,** who is researching the effects of a rapidly growing population on the biodiversity and sustainability of the agroecosystem of the Ethiopian highlands; and **Anna Zivian,** who is addressing the growing trend of environmental policy and politics and being contested at the local level in Austria.

The UCSC Wind Ensemble, under the direction of music lecturer Robert Klevan, performed at Carnegie Hall in New York City in February as part of the Excellence in Education concert series. At the conclusion of its performance, the 62-member ensemble received a standing ovation and curtain call.

Tim Krupnik is researching farming systems to improve rice production in Senegal.

How kids learn to 'think like scientists'

Thousands of years after roaming the riverbeds of what is now downtown San Jose, a juvenile mammoth will get new life inspiring a generation of young visitors to Children's Discovery Museum of San Jose.

As the museum develops an exhibit around the remains of the mammoth, UC Santa Cruz psychology professor Maureen Callanan is gearing up for a major research project that will explore the ways children learn to use evidence and figure out answers to questions in everyday life.

In other words, how they learn to "think like scientists," said Callanan.

The project is a collaboration among Children's Discovery Museum, UCSC, and the Museum of Paleontology at UC Berkeley, with funding from the National Science Foundation.

Callanan, who has collaborated with Children's Discovery Museum for nearly a decade, is also helping designers plan the new exhibit. Scheduled to open in 2011, it will feature a life-sized model of the full mammoth, as well as some of the fossilized remains.

COURTESY CHILDREN'S DISCOVERY MUSEUM

Maureen Callanan studies how young scientists explore the exhibits at Children's Discovery Museum.

LAURIE HATCH / LICK OBSERVATORY

The achievements of UCSC's astronomers and astrophysicists include new technologies at Lick Observatory on Mount Hamilton.

Big bang

UC Santa Cruz is the top-ranking university in the country for the quality of its research in astronomy and astrophysics, according to a recent analysis of papers published in scientific journals and how often those papers are cited by other scientists.

The analysis, performed by a top NASA scientist, Anne Kinney, used a combination of approaches to look at the impact of published work on the science of astronomy and astrophysics. Kinney said she undertook the study to help prospective graduate students evaluate departments that offer graduate degrees in astronomy. Kinney reported her findings in a paper, "The Science Impact of Astronomy Ph.D. Granting Departments in the United States."

More details on these and other news features are available at: **review.ucsc.edu/news**

Town and gown got together in January to show their support for students at the campus's annual Scholarship Benefit Dinner. The event spotlighted the role of Chancellor Emeritus Karl S. Pister and his wife, Rita Olsen Pister (pictured below with Chancellor Blumenthal), in increasing support for undergraduate scholarships—with special focus on the Karl S. Pister Leadership Opportunity Awards. This year's benefit dinner drew more than 300 guests and raised over $165,000 for scholarships.

TERRY WAY

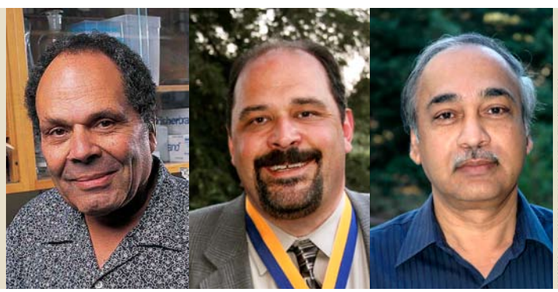
"Competition for the best graduate students is fierce, and we compete against the very best institutions in the world," said Bruce Margon, vice chancellor for research, "so it's important to be able to show that the quality and impact of our research is first-rate."

Kudos

TIM STEPHENS

Enrico Ramirez-Ruiz, assistant professor of astronomy and astrophysics, is the latest young scientist at UCSC to receive a prestigious Packard Fellowship for Science and Engineering. A theoretical astrophysicist, Ramirez-Ruiz is developing the conceptual framework needed to understand the observational data coming from new telescopes and astronomical surveys.

Alexander Gamburd, professor of mathematics, has won a Presidential Early Career Award for Scientists and Engineers, the highest honor that a beginning scientist or engineer can receive in the United States. The award provides $400,000 over five years to support Gamburd's research, which concerns spectral problems in number theory, probability, and combinatorics.



PHOTOS: R. R. JONES, JIM MACKENZIE, TIM STEPHENS

Three scientists have been awarded the distinction of AAAS Fellow by the American Association for the Advancement of Science. They are **Phillip Crews** (left), professor of chemistry and biochemistry, for "distinguished contributions to the fields of marine natural products and organic structure analysis"; **Darrell Long** (middle), professor of computer science, for his contributions to high-performance storage systems; and **Pradip Mascharak** (right), professor of chemistry and biochemistry, for "distinguished contributions to the field of bioinorganic chemistry, particularly in understanding how metalloenzymes work." There are now 29 AAAS fellows on the UCSC faculty.

ANN ARBIT

Green entrepreneur, urban advocate, and author **Van Jones was the keynote speaker** at the 25th annual UCSC Martin Luther King Jr. Memorial Convocation in February. Jones spoke to a crowd of more than 2,000 gathered at the Civic Auditorium about the need to move to a "green economy" and simultaneously conquer poverty. Above, Jones talks with students before the convocation.

Cabrera, Richards, Rickford win top honors

The common thread running through the Alumni Association's top award winners for 2008–09 is their exceptional ability to inspire. The award winners are:

JIM MACKENZIE

Rosalee Cabrera Alan Richards

Outstanding Staff Award: **Rosalee ("Rosie") Cabrera,** director, El Centro Chicano Latino Student Resource Center; Distinguished Teaching Award: **Alan Richards,** professor, environmental studies; Alumni Achievement Award: **John Rickford** (Stevenson '71), professor, linguistics, Stanford University. Cabrera and Richards, who will receive $500 each, will be honored at the new all-alumni reunion picnic on Saturday, April 25 (see page 3 for information about Reunion Weekend).

Rickford will be honored at the campus's Founders Day celebration in October.

Cabrera has worked at UCSC for 24 years in a variety of positions, including as a counselor at the Educational Opportunity Program.

Richards has taught for 32 years, first in the Economics Department and more recently in Environmental Studies. His experience living in the Middle East and working at the World Bank, the United Nations, and the Agency for International Development informs his teaching, as does his interdisciplinary approach to scholarship. (To read excerpts from an interview with Richards, see page 8.)

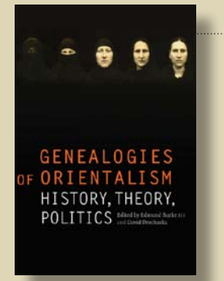
READ THESE STORIES AND OTHERS ONLINE. Elephant seals: Stelephant Colbert and Jon Sealwart reveal lives, loves on Facebook pages . . . Jack Baskin School of Engineering to establish **Keck Center** for Nanoscale Optofluidics . . . **$2.2 million grant approved** for program to train **stem cell scientists** . . . Alumnus wins **2009 Sundance** directing award for first feature film . . . **Medical robotics** expert explores the human-machine interface . . . As **super-predators,** humans reshape their prey at supernatural speeds . . . Undergraduate Danielle Soto elected to Pomona **City Council** . . . UCSC receives $150,000 grant for **Jewish Studies program** . . . Renowned conductor and UCSC alumnus **Kent Nagano** receives prestigious award from Japanese government . . . Study of disease risk suggests ways to avoid slaughter of **Yellowstone bison.** **review.ucsc.edu/news**

In Memoriam

Donald Coyne, 71, an adjunct professor of physics at the Santa Cruz Institute for Particle Physics from 1985 until his retirement in 2002, died October 1 in Santa Cruz. Coyne's career spanned particle physics from hadron spectroscopy, through the first decades of electron-positron storage rings, to the present collaborations of physicists building very large experimental facilities at colliders.

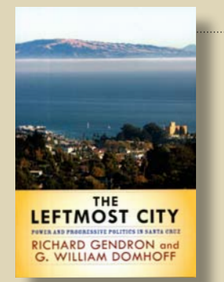
Noel King, 86, a professor of history and comparative religion at UCSC from 1968 until his retirement in 1991, died February 1 after a lengthy illness. An extraordinarily popular teacher, King was instrumental in providing foundation courses and a comparative framework for religious studies majors as well as others interested in learning about religion in an academic setting.

Suggested Reading

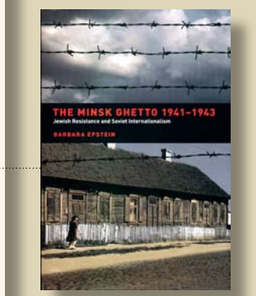


Genealogies of Orientalism: History, Theory, Politics (University of Nebraska Press, 2008), edited by history professor Edmund Burke III and David Prochaska at the University of Illinois at Urbana-Champaign, presents essays that respond critically to the phenomenon of Orientalism. The collection looks at the multifaceted ways in which modern cultures have drawn on Orientalist images and indigenous self-representations.

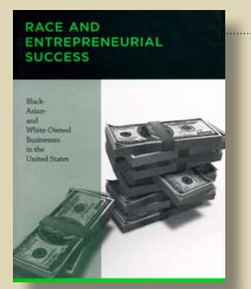
Food, Medicine, and the Quest for Good Health (Columbia University Press, 2009), by anthropology professor Nancy Chen, draws on medical texts and food therapy practices from around the world and throughout history to identify intersections between food and medicine.



The Leftmost City: Power and Progressive Politics in Santa Cruz (Westview Press, 2009), by G. William Domhoff, research professor of sociology, and Richard Gendron at Assumption College, utilizes an extended case study of the city of Santa Cruz to critique major theories of urban power.

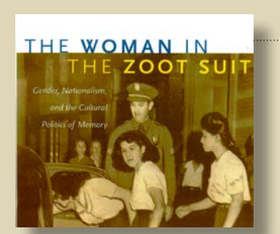


The Minsk Ghetto 1941-1943: Jewish Resistance and Soviet Internationalism (University of California Press, 2008), by history of consciousness professor Barbara Epstein, recounts a heroic yet little-known chapter in Holocaust history. Drawing from survivors' accounts, Epstein chronicles the history of a Communist-led resistance movement inside the Minsk ghetto, which enabled thousands of ghetto Jews to flee to the surrounding forests.

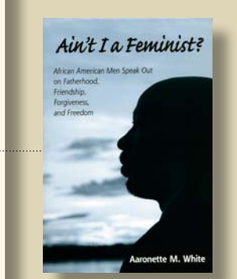


Race and Entrepreneurial Success: Black-, Asian-, and White-Owned Businesses in the United States (MIT Press, 2008), by economics professor Robert Fairlie and Alicia Robb, research associate in economics, provides a comprehensive analysis of racial disparities and the determinants of entrepreneurial performance.

Branding New York: How a City in Crisis Was Sold to the World (Routledge, 2008), by Miriam Greenberg, assistant professor of sociology, traces the origins of the modern-day branding of New York City. Focusing on the 1970s, the book describes the city's image crisis and the highly successful marketing campaign that transformed New York into a hip, tourist- and business-friendly destination.



The Woman in the Zoot Suit: Gender, Nationalism, and the Cultural Politics of Memory (Duke University Press, 2009), by Catherine Ramírez, associate professor of American studies, focuses on *las pachucas,* Mexican American women zoot suiters who came of age in Los Angeles in the 1940s.



Ain't I a Feminist? African American Men Speak Out on Fatherhood, Friendship, Forgiveness, and Freedom (State University of New York Press, 2008), by Aaronette White, associate professor of psychology, presents the life stories of 20 African American men who identify themselves as feminists, centering on the turning points in their lives that shaped and strengthened their commitment to feminism.

All featured books are available at the Bay Tree Bookstore on campus or at slugstore.ucsc.edu

Fiddling while the planet **burns**

Edited by Jennifer McNulty

ALAN RICHARDS, professor of environmental studies, is the recipient of the Alumni Association's 2008-09 Distinguished Teaching Award. An economist and an expert on energy politics and the Middle East, Richards created the class *Blood and Oil: Energy, the Middle East, and War,* to give students a historically based understanding of current events. We asked Richards to discuss climate change and the role educators can play in meeting the challenge. Excerpts from the interview follow.

I am deeply troubled by the disconnect between what public policymakers and natural scientists are saying about climate change. Leading scientists say we have three years to reverse the rate of carbon emissions and avert serious consequences.

So that's the bad news: Nobody in the public policy world is talking about actions that could do that. Instead, emissions are growing at a rate of about 3 percent a year. This is manifestly unsustainable. These emissions build up cumulatively, which is important. It's like piling on blankets. You may get too warm, but once you stop adding blankets, you're still hot.

And it gets worse, because everywhere in the world for the past 250 years, increasing standards of living have been accompanied by large-scale increases in the use of energy per person, especially in the relatively early phases of economic growth.

Yet it would be unreasonable and politically unfair for rich western countries to tell poor countries that they shouldn't become better off. So the big problem is how to make room in the atmosphere for the emissions that are going to come from poorer countries, without doing irreversible damage.

History suggests that people make deep changes only in a severe crisis. But with climate change, by the time the crisis hits, it's too late.

International impacts

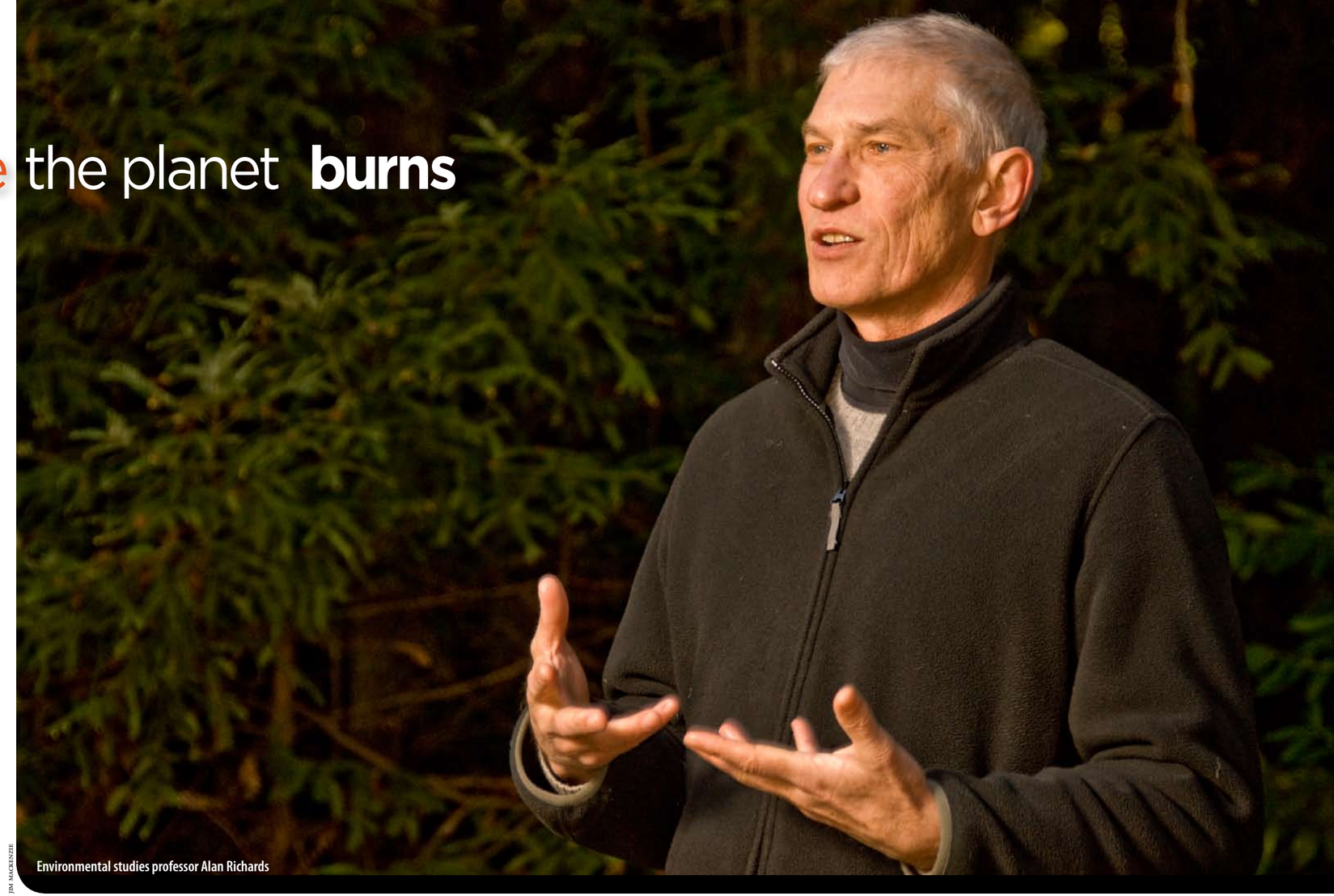
But the good news is the United States finally has a government that appears to understand this. Having a less belligerent administration is good because we need to make international deals. The United States and the Chinese have been locked in a suicide pact; they say it's our fault, and we say it's their fault. Both sides are right. The consequences of large-scale climate change include, according to the CIA, very scary impacts on international politics. For example, if the glaciers that sustain the major Asian rivers dry up and the water supplies of Northern India and Central China are seriously challenged, the governments of those countries—both of which have nuclear weapons—will face enormous pressures. Similarly, there could be large-scale immigration, literally floods of very poor people, moving from North Africa to Western Europe.

Devil's in the details

In the short term, this is a political problem, not a technological one, because the technology to reduce emissions already exists. There's an emerging consensus, led by people like Al Gore, that we need to electrify the economy and build a smart grid to generate electricity from renewable resources. We need serious public investment in changing the nature of the energy system, and we need incentives like a carbon tax, which people have been talking about for 20 years.

But, as always, the devil is in the details: Are there enough votes in Congress to pass legislation to implement the changes we need? What about the millions of Americans who continue to disbelieve in climate change? They appear to be turning into a minority force, but we've seen before that minority forces can still block important legislation.

As a social scientist, I think the scariest part of this is what I've learned from history. My reading of history suggests that people make deep, wrenching changes only in a severe crisis. But with climate change, by the time the crisis hits, it's too late.



JIM MACKENZIE

Environmental studies professor Alan Richards

This is the way change happens

The bottom line is that we had better get started. The nature of this problem is so large that everybody has to do what they can, as journalists, teachers, researchers, artists, and private citizens.

I believe we can avert the worst, but education will be critical. Sixty-nine percent of voters aged 29 and younger went for Obama. The youth get it. A lot of UCSC students are very engaged, and so is the chancellor. Our researchers are developing technological advances that could make this transition easier. This is an institution that collectively understands that we must do something, even in the midst of collapsing budgets and exploding enrollments.

This is the way change happens. The analogy I prefer is race relations. When I graduated from a segregated high school in Dallas in 1964, there was open, virulent racism. But last November, 57 percent of Dallas County voted for Obama. So I know change is possible.

Who pioneered that change? It was the Civil Rights Movement. But universities and educators helped foster the necessary cultural shift that delegitimized racism. Is racism gone? No, it's not. But it has been delegitimized, and there's no reason the same thing can't happen with respect to the environment. Deeply destructive environmental behaviors can be delegitimized.

Universities are hubs of innovation, and they are incubators for social change. We have enough scientific knowledge to make a big dent in global warming. But there has been a great deal of fiddling while the planet burns.

inventing a **greener** future

By Vicki Bolam
Illustration by Dennis Harms

what if you could fuel your car with a garden hose?

or recharge your iPod with solar power from your T-shirt? what if we could make cars more fuel-efficient by capturing the heat they waste? or use the carbon dioxide spewed by power plants to help heal the ocean?

These and other energy scenarios could become reality in the not-so-distant future, as a result of research now under way at UC Santa Cruz.

Sobering new reports from global climate experts paint an increasingly grim picture. "Current choices regarding carbon dioxide emissions will have legacies that irreversibly change the planet," says Susan Solomon, lead author of a 2009 National Oceanic and Atmospheric Administration (NOAA) study on rising CO_2 levels. Former vice president and climate change activist Al Gore is cautiously optimistic that we can still successfully address climate change if we take immediate and decisive action. "It is retrievable and solvable—if we start now on a bold program," said Gore.

UCSC scientists are helping to meet the challenge by pioneering innovative alternatives to fossil fuels—from super-thin solar energy materials to renewable

many of these advances draw on UCSC's

leadership in nanotechnology,

which provides a treasure chest of new tools to address tough energy challenges

hydrogen. And because humans won't stop burning oil and gas anytime soon, research teams are also exploring ways to make fossil fuels cleaner and more efficient. Many of these advances draw on UCSC's leadership in nanotechnology, which provides a treasure chest of new tools to address tough energy challenges. And the campus's longstanding partnerships with Silicon Valley are helping to put much-needed new technologies into practical use.

However, warns UCSC's Ali Shakouri, professor of electrical engineering, "Engineering solutions alone won't be enough to address the world's environmental and energy problems. We also need to make societal changes in the ways we use energy, and that will be far more difficult."

GETTING MORE SUN

Solar energy is widely seen as the cornerstone of a green revolution that can revitalize the U.S. economy while saving the planet. Unfortunately, the solar industry's reliance on traditional silicon panels (the ones we see on rooftops) greatly limits its potential. The problem is that refining silicon is expensive, energy intensive, and fairly toxic—plus the cells and panels themselves are difficult to mass produce.

"We need a paradigm shift—a complete change in the way we manufacture photovoltaics," said UCSC's Sue Carter, professor of physics and a leading solar energy researcher. "Silicon-based solar panels are relatively efficient at generating electricity, but there is no way we can produce enough of them in the near term to put a dent in fossil fuel plants."

Carter's research team is creating the next generation of solar energy—liquid materials that can be applied in very thin layers much like printing a newspaper. Carter's approach is cheaper because it uses far less material and energy to produce than do silicon panels. It is also safer and can be applied to just about anything, including flexible materials like thin plastic and fabric.

"With print-based manufacturing, all of a sudden you can produce large areas of solar-generating material quite cheaply," added Carter.

Carter's research is already having an impact on the industrial landscape. She proudly lists former graduate students who play key roles at innovative solar startups, and Carter herself is a technical adviser to a number of leading-edge firms.

With Glenn Alers, UCSC adjunct professor of physics, Carter has also initiated the Laboratory for Solar Energy and Renewable Fuels (SERF). SERF is part of the Advanced Studies Laboratories, a technology incubator located at the NASA Ames Research Center and sponsored by UCSC's Silicon Valley Initiatives (UCSC recently announced a partnership with NASA; see page 15). "We can offer the experimental expertise needed to help study new materials and incorporate emerging technologies into commercial products more effectively," said Carter.

FILL 'ER UP—ON WATER AND SUNSHINE

The so-called hydrogen economy is a compelling vision. Hydrogen is a very clean fuel, and there's definitely a lot of it around—mostly linked with oxygen in the form of water. And while it's not complicated to separate out the hydrogen, the process requires a fair amount of energy.

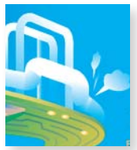
UCSC chemistry professor Jin Zhang is working toward what he calls the "holy grail" of carbon-negative hydrogen—hydrogen produced without using fossil fuel. His ultimate goal is a device that will turn water into hydrogen using only solar energy. "We need to overcome some technical problems," said Zhang, "but the potential of this research is enormous."

Zhang's work is attracting a lot of interest, including major research funding from the U.S. Department of Energy. "The theory works," said Zhang. "We can actually do it, but we can't yet generate hydrogen efficiently enough for it to be practical. We need to make it competitive with gas for people to actually use it."

Zhang and his research team are developing and testing new nanomaterials for a two-part integrated system that splits water into hydrogen and oxygen using sunlight.

"In theory," said Zhang, "you could have this device on one side of your car, with perhaps solar collectors on the roof, and just refuel with your garden hose." Realistically, he added, we might first see a hybrid vehicle that runs on its own solar-generated hydrogen when the sun is out—and on another fuel at night or on cloudy days.

NEW HEAT WAVE



UCSC's Ali Shakouri made news in 2001 when his research team developed a "refrigerator on a chip." The tiny device—about the

plugging in

'we need to make societal changes'

As an engineer, UCSC's **Ali Shakouri** seeks technical solutions, but he says that not even the most sophisticated new technologies can solve our energy problems without major changes in the ways we use energy.

"These issues are strongly rooted in how people live," said Shakouri. "We need to make societal changes, and that's not something engineers and scientists typically know very much about."

To help bridge that gap, Shakouri launched his interdisciplinary **Renewable Energy** course in 2006. The course brought faculty and students from engineering, sociology, and other fields together to explore energy issues. Shakouri then teamed up with four other faculty members—Ronnie Lipschutz (politics); Stephen Gliessman (environmental studies); Melanie Dupuis (sociology); and Ben Crow (sociology)—to offer **Sustainability Engineering and Practice** in 2007 and 2008. Together, they help students take a broader view of sustainability issues like energy, water, food, agroecology, transportation, and societal change.

The Nysted Offshore Wind Farm is among the renewable energy facilities operating in the Danish community of Lolland.

"Social science students learn more about the science and the quantitative approaches they need to understand the delicate relationships between our energy use and its environmental impact; and engineering students get a broader view of how technologies might affect society," said Shakouri. Lipschutz and Shakouri recently received two grants from the National Science Foundation to expand a curriculum for a course in sustainability engineering and ecological design.

In summer 2008, Shakouri launched **Lolland California Renewable Energies,** an international educational exchange program. Twenty students from three UC campuses and two Danish universities learned about the implementation of sustainable energy technologies in Lolland, Denmark, including state-of-the-art offshore wind farms; next year the program will be held in California. —Vicki Bolam

the campus's longstanding

partnerships with Silicon Valley

are helping to put much-needed new technologies into practical use

width of a human hair—uses engineered nanomaterials with just the right electrical and thermal properties to cool hot spots in microprocessors.

Now Shakouri is turning that breakthrough on its head, developing similar materials to turn waste heat from cars and power plants into electricity. His work, like Zhang's, relies on designing new materials at the nanoscale. "Our task is to engineer materials that don't exist in nature," said Shakouri.

Put simply, when materials of differing temperatures come in contact, the more active electrons on the warmer side tend to flow to the cooler side, thereby generating electrical current. Shakouri's new materials are making the process more efficient, in effect "herding" electrons and heat where he wants them to go.

Shakouri heads the Thermionic Energy Conversion (TEC) Center, a major national initiative that brings together top materials scientists, engineers, and physicists from seven universities to attack various aspects of the waste heat problem. Supported by a multi-million-dollar investment from the Office of Naval Research and the Defense Advanced Projects Agency, partners in TEC include UC Santa Barbara, UC Berkeley, Purdue University, University of Delaware, Harvard University, MIT, and BSST Inc.

Shakouri is optimistic that TEC's heat-capturing technology will be able to increase fuel efficiency by as much as 15 percent. It isn't ready to install in vehicles yet, he adds, but we can expect to see a test model within the next four to five years.

GOING CARBON NEGATIVE

Escalating CO_2 in the atmosphere not only contributes to global warming but is also rapidly making the world's oceans more acidic as they absorb all that excess CO_2. According to Gregory Rau, a senior researcher at UCSC's Institute of Marine Sciences, this change in ocean pH is already linked to declines in coral and other marine organisms.

"We need to implement sustainable energy sources immediately," said Rau, "but no matter how quickly we can gear up, fossil fuels will still be with us for the foreseeable future."

At UCSC's Long Marine Laboratory, Rau is testing an ingenious method of removing excess CO_2 that takes its cue from nature. "We're simply accelerating the natural process of limestone weathering," he explained, "which is one of the ways nature consumes excess atmospheric CO_2 and neutralizes ocean acidity." Unfortunately, Rau adds, in nature that process takes many thousands of years.

Rau's process borrows a technique from saltwater aquarium hobbyists, who use a comparable reaction to maintain the proper pH in tanks of coral and shellfish. Rau mixes limestone particles with seawater and pumps simulated power plant exhaust through the mix. His test reactor balances seawater chemistry while successfully removing up to 95 percent of incoming CO_2. Scaled-up reactors could potentially absorb the CO_2 emitted by power plants, while benefiting ocean ecosystems.

Rau is also working on a "supercharged" version of the technology designed to scrub CO_2 from the general atmosphere, not just waste streams. The trick is making the process faster and more efficient by adding a jolt of electricity—from renewable sources. "This could be done on a large scale," said Rau. "For example, we might see fleets of barges on the open ocean, loaded with limestone and covered with wind turbines, solar panels, or wave energy converters to power the reaction." An added benefit of the process is the production of hydrogen gas, a carbon-free alternative to fossil fuels. ■

"This partnership is important for our entire nation and will help to make this century an American century."

Anna Eshoo
U.S. Representative
14th District, California

delivering the future

innovation entrepreneurship sustainability

Silicon Valley has long been a global center of innovation. Now, with help from UCSC, it's becoming the epicenter of the green revolution.

UCSC and the Foothill-De Anza Community College District have formed a partnership and signed a lease with NASA Ames Research Center to establish a sustainable community for education and research at the NASA Research Park at Moffett Field.

The goal of the partnership is to create a prototype for an environmentally sustainable community and contribute to the economic vitality of the region, while providing a unique collaborative environment in which to deliver innovative education and research.

A March event at NASA Ames Research Park announcing the partnership was attended by university officials, scientists, engineers and Silicon Valley company leaders, in addition to Democratic Reps. Anna Eshoo of Palo Alto and Mike Honda and Zoe Lofgren, both of San Jose.

Artist's rendering of the education and research community envisioned for the NASA Research Park

The project, which is to be developed on 75 acres of land in the NASA Research Park, will create jobs and drive private industry, said Eshoo.

"This partnership is important for our entire nation and will help to make this century an American century," Eshoo said.

This vision includes an integrated community featuring state-of-the-art research and teaching laboratories, shared classrooms, housing, accommodations for industrial partners, and modern infrastructure. Work on the site could begin as early as 2013, with initial occupancy as early as 2015.

"Our vision is to seed innovation, entrepreneurship, and sustainability through the creative reuse of an important public asset for regional benefit," said UCSC chancellor George Blumenthal. "We aim to establish world-class programs and facilities dedicated to preparing the workforce of the future and to conducting research at the forefront of science and technology."

Designed to have a minimal carbon footprint, the community will serve as a model site to deploy and validate new renewable energy and resource conservation systems.

"Researchers, working together, will expedite development of emerging green technologies," Blumenthal said. "We will create knowledge, apply it to real-world challenges, and equip students to deliver results in the valley's burgeoning green-tech sector."

Carnegie Mellon University, Santa Clara University, and San Jose State University have also been involved in the early planning and may eventually join the partnership, said Joseph Miller, UCSC's vice provost for Silicon Valley Initiatives.

Development of the site, which is expected to cost more than $1 billion, would be undertaken through a public-private partnership.

Change on a fork

Dining Services is cooking up ways to accomplish its twin goals: serving good-tasting, locally sourced, sustainably grown organic food—and aiming for zero waste.

By Gwen Mickelson
Photos by Phil Carter, '10

WEDNESDAY 10 A.M. The kale and beets sitting on a kitchen counter at College Eight, bursting with vivid purples and deep greens, were in the ground just an hour before.

"This is prime time for kale right now," said David Evershed, who had brought several boxes of organic produce from the UCSC Farm to College Eight Dining Hall's kitchen through the January chill.

"It gets super sweet in the cold," said the bearded young man, gesturing to a large, leafy bundle of kale with a knowing smile. "Like candy."

Evershed, a second-year apprentice with UCSC's Center for Agroecology and Sustainable Food Systems (CASFS), is part of a grassroots movement started by students and encouraged by the campus's Dining Services unit to change the world one bite at a time.

Dining Services, started in 2004 after the campus ended its contract with integrated food and facilities management giant Sodexo (previously Sodexho), has become one of the most cutting-edge campus food service divisions in the nation, constantly seeking out and incorporating innovative methods to increase sustainability and reduce waste.

The department has done so well with those twin goals since becoming self-operated, in fact, that it recently beat out more than 20 national competitors to win a $5,000 grant to invest in even more projects. In addition, UCSC's dining halls were ranked the nation's "greenest" by *Plenty* magazine, a major environmental publication.

The effort has been rewarding, said Scott Berlin, director of Dining and Hospitality Services, and UCSC has the luck to be in its particular location—overlooking the rich farmland of the Pajaro and Salinas valleys, home to some of the most successful and productive organic farming operations in the country.

But the movement, he said, was student-generated and continues to be fueled by student energy.

"There's a significant amount of student interaction. It's a unique aspect," Berlin said. "These were student successes; we were just a willing vehicle."

Roots of reform

In 2003, the campus group Students for Organic Solutions brought together various stakeholders of the campus food system at the annual Earth Summit to discuss how to create sustainable change in the system, including purchasing organic produce from local farmers. At the same time, other students were expressing frustration with Sodexo's labor practices.

The discussions continued at the 2004 Earth Summit, and participants formed the Food Systems Working Group, which drafted purchasing guidelines for the campus that included buying local, certified organic, worker-supportive food products. After a six-month student campaign, UCSC ended its 30-year contract with Sodexo in June 2004.

Student-generated groundswell has, in fact, been at the heart of a sustainability movement for the entire UC system.

Many national reviews and assessments indicate that the system leads the higher-education pack in making big green changes, creating the most comprehensive and ambitious sustainability policy of any university system in the United States, according to the California Sustainability Alliance.

UC's path to leadership in sustainability was initiated by students who teamed up with the environmental group Greenpeace to bring together student activists, administrators, and faculty to tackle the lack of formal environmental awareness among the UC campuses.

Inspired by students' calls for action, the Board of Regents adopted a sustainability policy in 2003.

While UCSC's Dining Services unit is among those at the forefront of the campus sustainability movement, experts are seeing a trend toward sustainable food initiatives at universities and colleges across the nation.

"As institutions have committed to focusing on sustainability as a whole on campus, they are

Tim Galarneau, of the Center for Agroecology and Sustainable Food Systems (CASFS), packs fresh kale from the UCSC Farm with CASFS apprentices David Evershed, left, and Marsha Habib.

Liz Milazzo of CASFS harvests kale from the UCSC Farm.

CASFS apprentice David Evershed, left, brings fresh kale from the Farm to College Eight's Dining Hall manager Dennis Wake.

Surveying the selection at College Eight

Local organic produce is featured at UCSC's dining halls.

The dining room at College Eight

FROM FARM TO TABLE:

The kale and beets sitting on a kitchen counter at College Eight, bursting with vivid purples and deep greens, were in the ground just an hour before.

finally waking up to the fact that food is the one thing that connects all the issues surrounding sustainability: environmental, local economy, social issues, and, of course, the health and well-being of the people eating it," said John Turenne, president of consulting and technical-services company Sustainable Food Systems in Wallingford, Conn.

Everybody eats

Tim Galarneau (College Eight, '05) was a student in 2004, double majoring in psychology and community studies with an agroeceology/social justice emphasis. He was among those leading the student push for food sustainability and waste reduction, and he still is today as a staff member. He works as a food systems education and research program specialist at CASFS, and continues to help chair the Food Systems Working Group, which does education and outreach events on campus and works on sustainability, energy, and waste issues.

"Food is what really connects all of us," said Galarneau. "When I speak to groups, I ask them, 'How many of you out there eat?' It's a common equation—all of us eat, or would like to eat more than we do."

The United States' food system is a major contributor to greenhouse gases, said Galarneau.

"Not examining that is missing the point, and looking at it is a key part of planning, education, research, and problem-solving," he said. "I really wanted to carry that forward and share that excitement and enthusiasm and help people understand what they can do to shape the food system and their community."

In the run-up to Dining Services' self-operation, Galarneau and others worked with local organic farmers to form a syndicate, called the Monterey Bay Organic Farmers Consortium, which agreed to pool its goods and contract with the campus to provide locally grown organic produce. This contract was a first among the UC system's 10 campuses.

In addition to the 25-acre UCSC Farm, consortium farms include the Agriculture and Land-Based Training Association, Coke Farm, Phil Foster Ranches, Happy Boy Farms, New Natives/Greensward Nurseries, and Swanton Berry Farm.

Terminating the contract with Sodexo, creating an entirely new Dining Services department, developing purchasing guidelines, and forming a purchasing arrangement that met UC insurance, ordering, delivery, and invoicing requirements took "a lot of energy and work," said Galarneau. "But it felt great."

It was a starting point too, he said. "Ultimately, it doesn't do any good to have sustainable food in a dining hall and have a consumer base that doesn't know what that means. It's about a change of consciousness, not just a change of diet."

Opening the mind through the stomach

The campus purchases 85 percent of its organic produce through the Monterey Bay Organic Farmers Consortium, according to Candy Berlin, program coordinator for Dining Services (who is married to Dining director Scott Berlin). Produce, both conventional and organic, in total makes up 21 percent of the unit's $7.2 million food budget.

So how are the primary consumers—students—reacting to the campus's initiatives on sustainable food and reducing waste?

"Students are overwhelmingly looking for this in businesses they deal with and universities and colleges they come to," said Candy Berlin. "From the clothing manufacturers they buy from to the autos they choose, this generation wants to know that those companies are doing the right thing."

Change can be challenging, though. The kale and beets may be fresh, local, and organic, but these are students we're talking about. On a recent day at the College Eight Dining Hall, most diners carried plates of those iconic foods beloved by students through the generations: burgers, fries, and pizza.

Sustainable and organic foods are "there, but on the periphery," said Abraham Rivas, 20, a Merrill College history major who was eating lunch on a recent weekday at College Eight.

Rivas had taken a small scoop of that day's organic, local vegetable offering—sautéed green beans with roasted turnips and beets—but said he generally chooses foods based on flavor.

"Whether it's organic or not makes a difference, but mostly it's the taste," Rivas said.

One problem is educating students about the "seasonality" of foods, according to Scott Berlin. Students are used to seeing a huge array of foods in the marketplace and often do not understand that crops produced locally may be limited. But with ongoing education and marketing, the awareness of the relationship between food and the world we live in can only grow, he said.

On the waste front, each year Dining holds several "Zero Waste" events to bring attention to minimizing the campus's carbon footprint. Uneaten food scraps are collected during these events and weighed. From one recent audit, Dining learned that 106,050 pounds of potential food waste is created annually during the lunch period of just one of the five dining halls on campus.

These "waste audits" educate students on what taking more than they can really eat adds up to, said Scott Berlin.

"People are really disappointed during the audits when they see how much gets wasted," said fourth-year student Jennifer Pimentel, 22, who is serving an environmental services internship with College Eight.

And that leads to perhaps Dining Services' biggest opportunity of all: the chance to open thousands of young minds every year as the importance of minimizing human impact on the planet becomes increasingly urgent. The hope is that UCSC students will take what they learn at the dining halls out into the world and spread those ideals in a ripple effect.

Though organic foods are too expensive for him to purchase at the moment, student Rivas thinks his eating habits have changed during his years at UCSC.

"There are so many more things I'd like to try," Rivas said. "I'm definitely more open-minded—even to things that sound really bad, like tofu."

Serving sustainability

Steps UCSC Dining Services has taken over the past five years toward increased sustainability:

- **Dining Services teamed up with PG&E** to replace old lighting with more energy-efficient alternatives, saving nearly $10,000 annually. A $26,500 rebate from PG&E will fund future sustainable Dining Services projects.
- **Installation of 56 Energy Star–rated appliances** has cut most department energy costs in half.
- **Elimination of all food trays** is saving an estimated 30,000 gallons of water a month while reducing water-heating costs and the use of cleaning chemicals. Food waste per plate has been cut by more than 40 percent—significant, since Dining Services serves more than 11,000 meals per day.
- **Thanks to a pilot composting program** (collecting kitchen scraps from four dining halls and transporting to the Vision Recycling composting project at Buena Vista Landfill in Watsonville), Dining Services diverted nearly 30 tons of food scraps from the landfill between August 15 and December 1, 2008. Campus recycling has been instrumental in collection, transportation to the landfill, and supporting educational outreach.
- **Compostable paper products and flatware** made from corn or potatoes—100 percent biodegradable and compostable—have replaced traditional disposables.
- **Vegetable and meat scraps are used for soup stock,** and grease, fat, and French-fry oil are recycled for other purposes, such as biodiesel fuel. Other perishable food is donated to a local food bank. When food must be thrown away, it is converted to slurry with a pulper, reducing cubic yards of waste collected in dumpsters by two-thirds.
- **All campus dining halls and retail locations brew** Community Agroecology Network (CAN) coffee daily. An innovative project between the campus and coffee growers, CAN creates a fair-trade market and collaborates with farmers to improve local, sustainable farming practices.
- **Cage-free eggs** are available at all dining halls and retail locations.
- **Nine campus dining locations are "green" certified** by the Monterey Bay Area Green Business Program, and two more sites are being inspected and certified. To be certified "green," participants must be in compliance with program regulations and meet standards for conserving resources, preventing pollution, and minimizing waste.
- **Other sustainable practices** under consideration include using reusable containers for all to-go meals; investigating more vegetarian-based menu items; installing self-service water-bottle refill stations to reduce the use of disposable plastic water bottles on campus; and installing solar-powered trash compactors.

—Gwen Mickelson

A Sustaining Vision

PHOTOGRAPHY BY **PHIL CARTER ('10), DON KENNY, JIM MACKENZIE,** AND **ALISON MANNING**

Frank Zwart

College Nine-Science Hill bridge

When Frank Zwart was a student at UC Santa Cruz in the late '60s, he and his friends would gather for full-moon picnics on the site where the Theater Arts Center stands today. There were few permanent buildings then—the campus had just opened in 1965—and those first pioneering students came to know intimately the meadows, forests, and ravines of the campus.

By the time Zwart graduated in 1971, the campus core was beginning to take shape, guided by the principles developed by nationally known architects and landscape architects. The planners sought to weave UCSC's unique academic plan with its extraordinary site, following a few overarching guidelines:

The setting would remain simple and natural, with landscape refinement restricted to the college and academic courtyards.

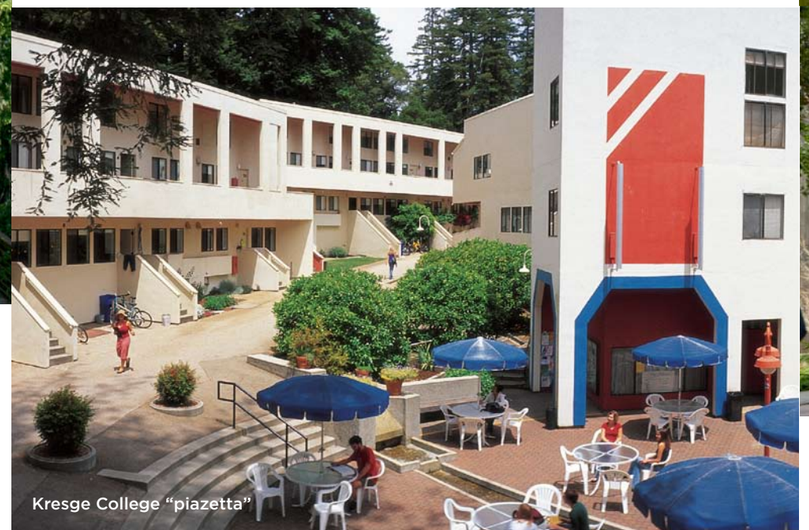
There would be a core of larger academic and common buildings surrounded by smaller-scale colleges.

Each building would be designed individually with respect for its distinct academic mission and its particular setting.

Ravines and wildlife corridors would be conserved.

Meadows would remain open to protect views.

Buildings would mingle with the trees at the forest edge.



Kresge College "piazetta"

The resident string ensemble rehearses near the Academic Resource Center.

Between classes on "Science Hill"; in the background is the Science and Engineering Library

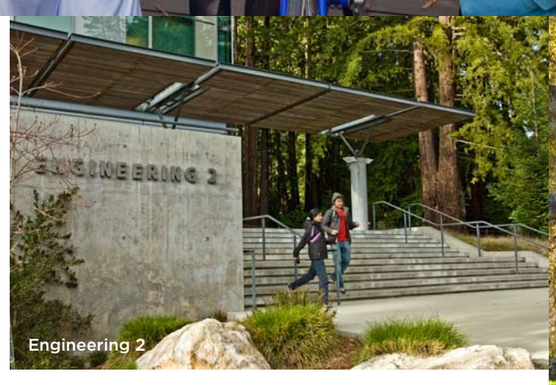
A Sustaining Vision

Zwart returned to UCSC in 1985 to take a job as project manager in the campus architect's office. He became part of the team guiding the campus through a period of significant growth, adding colleges and developing the density of the academic core.

Today Zwart is associate vice chancellor for physical planning and construction—leading an international team of campus architects and planners who continue to integrate the early planning principles into a sustainable vision.


Stevenson College


Bridge near McHenry Library



Engineering 2


Humanities 1 Building


Core West Parking Structure


Stevenson College Knoll

COWELL COLLEGE

'69 Blair COOPER has developed a web site in memory of George Skakel, one of two Cowell students killed in Vietnam; the statue in the Cowell courtyard is dedicated to them. *City on a Hill Press* published numerous letters from George vividly describing the war and a soldier's life in Vietnam. To read these letters and learn more about George, go to *http://web.me.com/bcooper8446/Remember_George_Walter_Skakel/GWS.html*. **Irene VAN DER ZANDE** is the cofounder and executive director of Kidpower, a nonprofit organization teaching people of all ages and abilities to stay safe and act wisely. Her book, *The KIDPOWER Book for Caring Adults: How to Teach Self-Protection and Confidence Skills to Young People*, is available at *www.kidpower.org*.

'71 Hatte RUBENSTEIN Blejer works in technology consulting and lives a stone's throw from Washington, D.C. For 30 years she was married to a wonderful Argentine, who died of Creutzfeldt-Jakob Disease in 2004. She has a son who does stand-up comedy, and her daughter will be a grad student in TV and film at USC in 2009.

'77 Bob LOMBARDI is a motorcycle safety instructor in Stockton and Modesto, Calif.; his latest motorcycle adventures took him to Death Valley and to Tombstone, Ariz. Bob continues to be active in groups supporting motorcycle and Second Amendment rights.

'84 After 12 years practicing in law firms, **Kevin MICKEY** opened his own practice in Spokane, Wash., in October 2007.

'93 Kara STARKEY welcomed baby daughter Anna Kay in spring 2007 and recently opened a private practice in Santa Clara, Calif., as a licensed marriage and family therapist.

'95 Mac MONTANDON is the author of *Jetpack Dreams: One Man's Up and Down (but Mostly Down) Search for the Greatest Invention That Never Was* (Da Capo Press, 2008), which chronicles the colorful pop history and science of the jetpack.

'98 Marcella NEWHOUSE is a sales representative for Diamond Wine Merchants in the Santa Cruz/Monterey area; the Court of Master Sommeliers awarded her its certification in August 2007.

'01 Michele DAVID lives on the Westside of Santa Cruz with her boyfriend, Robert Mahrer, a general building contractor; she has a daughter (16) and a son (8). Michele works as program manager for the Santa Cruz Institute for International Economics at UCSC.

'02 Todd LARSON teaches urban kids about nature and the great outdoors through a nonprofit program called Elemental Awareness, supported by Elements Skateboards' founder Johnny Schillereff.

'05 Monica IGLECIA is working toward completing an M.S. in zoology at North Carolina State University; her research is focused on informing conservation planning of avian species' diversity by understanding landscape-scale population dynamics.

STEVENSON COLLEGE

'68 Rick CHATENEVER (M.A. literature, '69) is entertainment and features writer for *The Maui News*; he won first place at the Hawaii Society of Professional Journalists' annual Excellence in Journalism Awards for a story about New York street artist Swoon. After law school at UC Berkeley's Boalt Hall, **William DRUKKER** spent 22 years as a Navy JAGC officer, retiring as a commander, followed by 15 years at Chapman University, retiring as chair of the Criminal Justice Department. William now teaches law and criminal justice at Cal State University, Long Beach, volunteers at the VA, and tries to give back for all the good fortune he has received.

'69 John GOEHRING and his wife celebrated 32 years as owners of The Toyworks, Sonoma County's award-winning specialty toy stores. **Linda Kay TARPLEY Hale** is semiretired in Sonoma, Calif., where she taught for 36 years; she now works as an educational consultant for Dataworks Educational Research and volunteers with the Sonoma Land Trust to preserve open space. She is also writing a bilingual children's book series.

'74 Walt BOYES has been elected a technical fellow of ISA, the Instrumentation, Systems and Automation Society, in recognition of substantial contributions to the measurement of flow.

'78 Sally SEDGWICK teaches philosophy at the University of Illinois at Chicago; her book, *Kant's Groundwork of the Metaphysics of Morals: An Introduction*, was published by Cambridge University Press in 2008.

'81 Jonah (James) PAFFHAUSEN was elected archbishop of the Orthodox Church in America and Canada in November and installed by the Holy Synod of Bishops at St. Nicholas Cathedral in Washington, D.C., in December; previously he was Bishop of Fort Worth.

'87 Lance BERNARD's first book, *Architecture and Regional Identity in the San Francisco Bay Area 1870–1970*, was published in May 2007 by Edwin Mellen Press and currently appears in over 50 academic and public libraries; in July, after five years in the Midwest, he returned to Reno, which is closer to friends and family.

'90 Katie KRAEMER and **David PITRE** (College Eight '91) own and operate an organic farm and CSA outside Austin, Texas.

'97 Sarah RUSSELL provides health care to the underserved as a family doctor; she also travels internationally to provide medical services and teach medical students.

'04 Abigail REYNOLDS graduated from Alliant International University, Los Angeles, with a Psy.D. in clinical psychology.

We'd like to hear from you

- Use the envelope in the middle of the magazine to send us your class note
- *or* send an e-mail to *review@ucsc.edu*
- *or* submit a note via the web at *alumni.ucsc.edu* (go to Class Notes)

CROWN COLLEGE

'80 Holly HADLOCK works for the U.S. Environmental Protection Agency in San Francisco; her oldest daughter became a College Nine Slug in fall 2008.

'90 Katie CHERRY Roarty writes that with her eight children she can hardly keep her head afloat.

'91 Kristin KAMMERER Maithonis and her husband, **Chuck MAITHONIS** (Crown), had their first child, Zoe, in June; Kristin manages the City of Norwalk Housing Authority, and Chuck is a professional musician.

'92 Joseph DeRISI, a Howard Hughes Medical Institute investigator and professor of biochemistry at UC San Francisco, was selected to receive the 14th annual Heinz Award for Technology, the Economy and Employment, among the largest individual achievement prizes in the world.

'95 Bridget GILLIN Smith (M.A. education, '97) has published her first book, *The Unauthorized Guide to Legoland, California*, available for purchase on *LULU.com*. Friends can follow the family adventures of Bridget, her husband **Ken SMITH** (Crown '93), Justin (9), Destiny (4), and Jared (3) on Bridget's blog *www.familyadventureguidebooks.com*.

MERRILL COLLEGE

'71 Roz SPAFFORD was named winner of the first annual Gell Poetry Prize for her first book of poetry, *Requiem*. As winner, she received a $1,000 honorarium, a two-week fellowship at the Gell Center, and publication of her book by Big Pencil Press.

'78 Tom FAGAN is the author of *Extreme Attraction* (iUniverse, 2005), a story about the transforming effect two women had on him.

'82 Narciso RODRIGUEZ received an A+ for Energy grant from the BP Energy Education Program to teach his third-grade students in South Gate about energy, energy conservation, and alternative energy choices; he is the proud parent of two current Banana Slugs: Vicente, College 10 (Class of 2009); and David, College Nine (Class of 2011).

'91 Ken GREENE is an assistant professor of government at the University of Texas–Austin ("the Santa Cruz of the South"). His first book, *Why Dominant Parties Lose: Mexico's Democratization in Comparative Perspective*, won a 2008 Best Book Award from the American Political Science Association. **Jennifer WALL** is president and winemaker of Three Alarm Cellars in Sonoma County, which collaborated in 2008 with the National Fire Protection Association to spread its annual safety message.

Richard Harris: one **cool** reporter

FRED GORELL/NOAA

Richard Harris reporting from the Arctic for NPR.

Richard Harris has traveled to Timbuktu to witness how climate change is forcing nomadic tribes to give up their wandering lives for a more sedentary existence.

He has climbed the ice-shrouded Mt. Erebus in Antarctica to watch a volcanologist at work and stood beside a charismatic Maasai named Samuel Pilipili as the man administered daily doses of tuberculosis medicine to fellow tribe members in Kenya in an effort to cut the disease's deadly toll.

All of this was done, not for adventure, but to help people learn about scientific discoveries and challenges in our world today.

"I like to tell stories to help people understand what kind of a place we live in and the interesting things scientists are doing," said Harris, an award-winning science correspondent for National Public Radio and a 1980 Crown College graduate. "So many decisions as a society are based on understanding science. To the extent we can understand science more, we can make better decisions."

Curious by nature, the biology major found himself drawn to journalism while taking a science writing course at UCSC from John Wilkes. Reporting satisfied his eclectic interest in science. "Every place I looked interested me," he said.

Harris worked for the *San Francisco Examiner* before being hired in 1986 at NPR, where stories have taken him from the sides of lake-swallowing holes in Greenland to the eerily empty streets of Beijing during the height of the SARS outbreak.

"What drives me is my own thirst for knowledge," said Harris in a telephone interview from his cubicle in NPR's Washington, D.C., offices. "It's my own desire to find solutions," he said—to help people think about their personal lives on this delicately balanced planet.

Unassuming on the phone, the 51-year-old Harris talks easily about the people he has met but is more reticent about himself, although he admits to being in training for a 100-mile bike ride. He also is looking forward, he said, to doing more stories about how we can shift our lives in the face of climate change and how our oceans are undergoing major alterations, including acidification.

His job, he admitted, has given him a front-row seat on the world. What satisfies him most is taking us along for the ride.

Richard Harris will be a panelist in a discussion on "Shaping Our Environmental Destiny" April 25 as a part of the Alumni Association's Reunion Weekend, April 24–26. For more information about Reunion Weekend, see page 3 or visit *review.ucsc.edu/reunion*.

—Peggy Townsend

'02 Maya CRONE completed her M.A. degree in international policy studies with a specialization in gender and development at Monterey Institute of International Studies in May.

PORTER COLLEGE

'77 Sharon TURNOY accepted a position at HP in Cupertino, Calif., as senior manager of executive communications for the executive vice president of the Technology Solutions Group; she welcomes greetings from former classmates at *sturnoy@yahoo.com*. **Steven WOLOCK** was included in The Best Lawyers in America 2009 as a top practitioner of malpractice law; he works at the law firm of Maddin, Hauser, Wartell, Roth & Heller.

'86 Brian DUGGAN's book *Saluki: the Desert Hound and the English Travelers who brought it to the West*—a human/canine adventure set against the formation of the modern Middle East—was published in November by McFarland & Co.; Brian is director of learning services at California State University, Stanislaus. **Julia SWEIG**, Nelson and David Rockefeller Senior Fellow for Latin American Studies and director of Latin American Studies at the Council on Foreign Relations, appeared on the *Colbert Report* July 15, discussing U.S. foreign policy and her recent book, *Friendly Fire: Losing Friends and Making Enemies in the Anti-American Century* (PublicAffairs, 2007).

'91 Sarah FARAGHER Aucoin is deputy director of the Urban Park Rangers; she lives in New York City with her husband, Brian, and their two sons, Arthur (3) and Oscar (1).

'94 Matthew BAUGHMAN is a producer on the *Curious George* animated series, which airs weekday mornings on PBS; he lives in Southern California.

'95 Jocelyn MARKLE lives in Marin with her son, Inigo, and her dog and cats; she's worked as an interactive producer for web sites and other online projects since 2000.

'01 Joe DePAGE is bass player in a "psycho-billy" act, Vlad and the Impalers; he celebrated the release of their second album, *Live in Estonia*, by marrying longtime partner Justin Ward in a civil ceremony.

'02 Charles HAYES is coauthor, with Brendan Brandt, of *Waiting Tables, Dodging Bullets: An Actor's Guide to Surviving Los Angeles* (Wheatmark, 2008), a hip, entertaining guide for the struggling young actor.

KRESGE COLLEGE

'73 Gary NOVACK, Ph.D., was appointed to the board of directors of the American Society for Clinical Pharmacology and Therapeutics; he is a board-certified clinical pharmacologist, specializing in developing new drugs to treat eye diseases.

'76 Debbie ARENSON Boye has been business manager for Boye Knives for the last 25 years. The company's new sailing knife received rave reviews in several national publications.

'79 Art HENRIQUES is director of planning and building inspection services for San Benito County; he's married and has three children, the oldest of whom is a pastry chef. After receiving her M.A. in educational administration from Santa Clara University in 1995, **Susan TATSUI-D'Arcy** has been working as a local college adviser and private school director; she is also the author of, among other titles, *Beat the College Admissions Game: Do a Project!* (2006), *The 21st Century Mother's Guide to Managing Time and Taking Control of Your Life!* (2006), and *The Eco Xmas Tree* (2006).

'82 Carmen GERMAIN was a visiting artist at the American Academy in Rome in February 2008; her poetry collection, *These Things I Will Take With Me*, was published by Cherry Grove.

'88 Dawn VALADEZ is producer/director, with Kristy Guevara-Flanagan, of *Going On 13*, a documentary film about four years in the lives of four girls in the San Francisco Bay Area as they go through puberty. They are girls from the city, from immigrant and multiethnic families, who have grown up with stepparents and within extended families. Learn more at *www.goingon13.com*.

'94 Thea HILLMAN's memoir, *Intersex (For Lack of a Better Word)*, was published in 2008 by Manic D Press.

'99 Brindl MARKLE released her third album, *Acoustic Heart*, in April 2008; she also started her own label, Moxy Music, and launched *MoxyMusicOnline.com* to support independent musicians.

OAKES COLLEGE

'75 Edward BRENNAN (Ph.D. biology, '79) was elected a member of Goucher College's Board of Trustees for 2008–11; he is an independent business consultant and the father of a 2007 Goucher graduate. **Fred SPEAKS** is retired after running his contact-lens company for 25 years, and he is single again.

'91 In October, **Danielle OCHS-Tillotson** joined the national employment law firm of Ogletree, Deakins, Nash, Smoak & Stewart, P.C., in its San Francisco office.

'94 Ilisa KESSLER has been named general manager of the new Women's Professional Soccer [San Francisco] Bay Area franchise.

'01 Jonathan WISHNEV has become an independent technical computer consultant. Between repairing computers and gardening, he is working on a fixer-upper he bought in 2006 in Oakland, Calif.

'02 Jenner BALAGOT works with one of the world's largest banks, developing a program to deter money laundering; he's married and has two sons.

COLLEGE EIGHT

'74 Christopher BURGART lives in Orange County and has worked in the San Francisco Bay Area as a private investigator for 34 years, with a nine-year sabbatical in Paris and Maui in the 1980s and 90s. **Scott COLTRANE** (M.A. sociology, '85; Ph.D. sociology, '88) is dean of the College of Arts and Sciences at the University of Oregon.

'78 Paul HANDLEMAN is a branch chief, managing other lawyers at the IRS. "What's next?," he asks.

'90 James SCHOLLARD has a lifelong career in the environmental field. "There are always plenty of work opportunities, challenges, and frustrations," he writes.

'95 Winnie POON and her husband, Tommy Thorn, welcomed the arrival of their first child, Viggo Thorn, in July.

COLLEGE TEN

'07 Kristin TRAYLOR opened the POP Champagne and Dessert Bar in Pasadena, Calif., with fellow alum **Matt EARHART** (College Eight '00).

GRADUATE STUDIES

'75 Peter ERICKSON (Ph.D. literature), a visiting professor of humanities at Williams College, has published a new book, *Citing Shakespeare: The Reinterpretation of Race in Contemporary Literature and Art* (Palgrave Macmillan, 2007). His courtship of and marriage in 2007 to Lisa Graziose Corrin, director of the Williams College Museum of Art, were chronicled in the "Vows" section of the *New York Times*. **Marc HOFSTADTER** (Ph.D. literature) has a new book of poetry, *Luck*, published by Scarlet Tanager Books of Oakland.

'79 Judith TOTMAN Parrish (Ph.D. Earth sciences), professor of geological sciences at the University of Idaho, was elected president of the Geological Society of America; she assumed the presidency on July 1.

'97 Jarita HOLBROOK (Ph.D. astronomy and astrophysics) was elected a vice president with the European Society for Astronomy in Culture at the society's symposium in Granada, Spain; she is a scientist at the University of Arizona Bureau of Applied Research in Anthropology, where she studies the many ways in which astronomy and culture intersect in Africa.

'98 David LUIS-BROWN (Ph.D. literature), an assistant professor in the Department of English at the University of Miami, has had his book, *Waves of Decolonization: Discourses of Race and Hemispheric Citizenship in Cuba, Mexico and the United States*, published by Duke University Press; he is on research leave in residence at Harvard University for the 2008–09 academic year.

'04 Kristen CHENEY (Ph.D. anthropology) is an assistant professor of anthropology at the University of Dayton. Her book, based on her UCSC dissertation research, *Pillars of the Nation: Child Citizens and Ugandan National Development*, was released by the University of Chicago Press in 2007. She has received a Fulbright grant to complete her current research on African AIDS orphans.

Vanessa Cervantes: **Becoming** a leader


JIM MACKENZIE

Vanessa Cervantes credits the strong support of her family for her success at UCSC.

Vanessa Cervantes knows the importance of family when it comes to success.

She saw the determination of her hardworking parents, both high school dropouts, who saved their money and opened a jewelry store in the agricultural town of Santa Maria, Calif.

"My parents taught me never to give up," said Cervantes, a slim 21-year-old senior with dark eyes who avoided the gangs that peppered her town and instead turned to sports such as soccer and softball, earning a black belt in Tae Kwan Do as a youngster. Her parents and sister have tirelessly supported her, she said.

She also took inspiration from a cousin, Josue Medrano, who has been wheelchair-bound since childhood with cerebral palsy but became one of the first in his family to go to a university, earning a master's degree from UC Irvine. He encouraged Cervantes to study hard at Santa Maria High, where almost 25 percent of students drop out and only 4 percent go to a four-year college.

"He told me, 'You can do whatever you want,'" Cervantes said.

So, even though academics were a struggle, the shy Cervantes signed up for Advanced Placement classes and joined the soccer team. Her acceptance to UCSC "was a huge accomplishment for me."

At College Eight, Cervantes discovered another family. As a residential adviser, she found herself helping students with their problems and becoming a leader. She was named to the Student Committee on Committees and the Student Fee Advisory Committee. She helped put on a multicultural event that drew 500 students, and she joined the Latino Business Student Association.

In 2008, Cervantes was given a College Service Award from UCSC's Alumni Association, which included a $500 scholarship supported by membership in the organization.

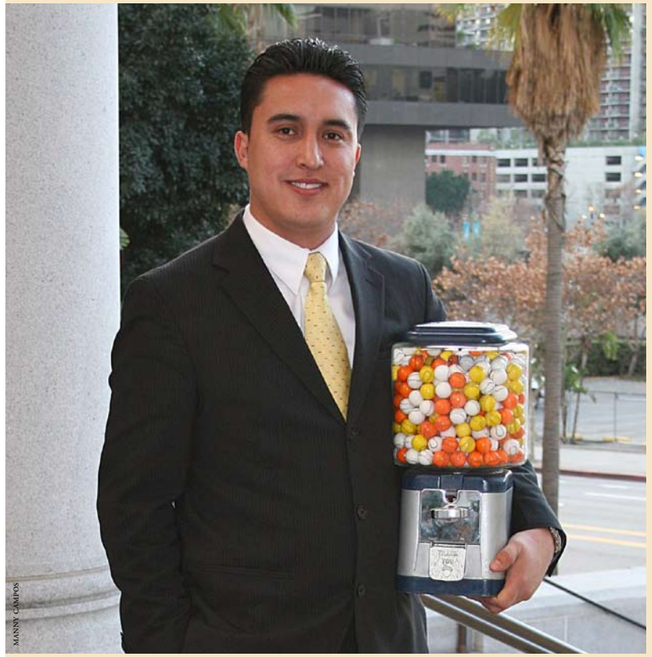
The award was important for Cervantes, not only to demonstrate that a shy young woman had come so far, but also to help finance her final quarters at school after the recent economic downturn and her parents' divorce left her struggling financially. But Cervantes is determined to get her degree in sociology and eventually work for Child Protective Services before becoming a child psychologist.

It will be a way, she said, to help children who do not have what she had: a family.

You can help support today's student leaders by becoming a member of the UCSC Alumni Association. A portion of your fee goes to support awards and scholarships for deserving students such as Vanessa Cervantes. For information on membership or to join, call (831) 459-2530, or visit *review.ucsc.edu/reunion*.

—Peggy Townsend

Ezequiel Olvera: **Sweet** success



MANNY CAMPOS

Ezequiel Olvera, standing on the steps of Los Angeles City Hall, holds the gumball machine that launched his boyhood business.

Alfredo Vargas remembered the skinny 11-year-old boy who came into his shoe repair shop in East Los Angeles and asked if he could put a secondhand gumball vending machine inside.

"I asked him why he wanted to have the machine there, and he said because he wanted to go to college," said Vargas; then he laughed. "I didn't even want it in my shop."

But, Vargas said, he could see a determination and intelligence in the boy, and so he agreed. "I told him, 'I think you're going to go far.'"

Six years later that boy, **Ezequiel Olvera,** had 40 gum and soda vending machines in shops around East L.A. and an acceptance letter to UC Santa Cruz.

At UCSC, the now six-foot Olvera got a job as a campus tour guide despite being self-conscious about his background in front of the dignitaries he met. One of them, the sister of then Lt. Gov. Cruz Bustamante, was so impressed, she encouraged Olvera to get an internship with the California Commission for Economic Development. Olvera, a business management and economics major at Oakes College, seemed to be fulfilling Vargas's predictions.

But then trouble intervened. The fiancé of one of Olvera's sisters died and then she suffered a paralyzing stroke. His father was also having a hard time. Duty made Olvera take time off from college, although he didn't tell anyone his reason for leaving.

"I thought it would be seen as a weakness," said Olvera, now 25. "But it was just part of life."

Discouraged, Olvera went home but saw an opportunity to work in Antonio Villaraigosa's L.A. mayoral campaign. There, he met labor leader Dolores Huerta, who encouraged him to not lose sight of his dreams.

Olvera eventually returned to UCSC, where he founded the Latino Business Student Association and then, after graduation, landed a job with a major accounting firm in San Francisco. But drawn to Barack Obama's historic campaign, Olvera quit his job to work for the candidate. Now he is helping spearhead a friend's congressional campaign.

Remembering the lessons he learned at UCSC, Olvera became a lifetime member of the Alumni Association.

"For me, it is a big benefit to be part of a large network of people that I can reach out to in the future," Olvera said. "And, I think it is very important to give back."

Give back or pay it forward: Join the UCSC Alumni Association at review.ucsc.edu/alumni or call (831) 459-2530.

—Peggy Townsend

IN MEMORIAM

'80 Chris RUBIN (Kresge), longtime food, wine, and travel writer for publications including *Travel & Leisure, the L.A. Times,* and *Variety,* died on August 15 from EHE [epithelioid hemangioendothelioma], a very rare and deadly form of vascular cancer; he was 49. **Stephen VANCE** (College Eight) was killed by gunmen November 12 during an ambush in the turbulent area of Peshawar in Pakistan, where he directed a U.S.–funded job creation and workforce development project; he was 52.

'91 Samantha SCALLORNS Szemeredi (Kresge), associate registrar for enrollment and academic records at UCSC, died of cancer June 30; she was 41. Her husband, Robert Szemeredi, works in the UCSC Undergraduate Admissions Office.

'04 Joey LUTZ (Cowell; M.A. education, '05), who taught English at Santa Monica High School for three years, drowned in July while vacationing in Panama; he was 25.

'07 Andrew HURWITZ (Cowell), who spent time teaching English in Vietnam and worked for National Wind in Minneapolis, died unexpectedly on August 1 at age 23. **Jordan McKAY** (Porter), who worked in the field of computer modeling and loved music, travel, and bicycling, was shot and killed near his home in San Francisco on September 17; he was 23. His friends and family have created a web site at *www.jordanmckay.com.*

If you are not receiving invitations and e-newsletters about alumni activities, and you would like to, send your e-mail address to **review@ucsc.edu**.