UC SANTA CRUZ

Winter 2003

REVIEW

The true-life tale of two UCSC eco-sleuths seeking to solve the riddle of . . .

What's Killing Panama's Coconut Palms?

PLUS:

- A UCSC historian's new "biography" of the Rhine River
- A UCSC biochemist's search for medicines in marine sponges

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Produced by UCSC Public Information and Publications. 2/03(03-045/66.3M)

UC Santa Cruz (USPS 650940)
Vol. 40, No. 3 / Winter 2003
UC Santa Cruz is a series of administrative publications published quarterly by University Relations at UC Santa Cruz. Periodicals postage paid at Santa Cruz, CA 95060. Postmaster: Send address changes to the University of California, Santa Cruz, University Relations, 1156 High Street, Santa Cruz, CA 95064-1077.

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From the Chancellor

By M.R.C. Greenwood

As I write this in January, hardly a day passes without news detailing California's worsening budget crisis. Estimates of the magnitude of the problem have varied, but Governor Davis's own numbers suggest that the state's annual deficit will exceed $30 billion without massive adjustments to the revenue the state collects, the expenditures it makes, or—most likely—both.

Even if this number is reduced by the regular reassessments of California's bottom line, the budgetary shortfall represents a staggering amount by anyone's calculations. It is clear that state government as a whole, the 10-campus University of California system, and our campus, UC Santa Cruz, are entering what will be a very challenging phase in our histories.

At UC Santa Cruz, we already know that there will be new cuts targeted to research, outreach programs, student affairs, libraries, and in the dollars it takes to administer an enterprise as many-faceted as UCSC. We also know that, under almost any scenario, students (and their parents) will be asked to pay more for higher education. Already, mandatory systemwide student fees at UC have been increased $135 per quarter, beginning this spring. And the governor's proposed 2003–04 budget would require an additional fee hike of $795 per year for undergraduates who are California residents.

Fee increases are always difficult, but when they take effect during an economic downturn, it can be especially challenging for some of our students and their families. For this reason, the University of California will increase the amount of financial aid that will be available to protect low-income students from the full extent of these increases.

R. R. JONES

In the face of fiscal uncertainty, we have launched a campuswide budget planning effort to preserve UCSC's commitment to superlative instruction, world-class research, and public-service activities that make a positive difference to society.

At UCSC, we have also launched a campuswide budget planning effort in the face of this fiscal uncertainty. The initiative, under the leadership of Campus Provost and Executive Vice Chancellor John B. Simpson, will identify options for reducing our expenditures—with a goal of preserving UCSC's commitment to superlative instruction, world-class research, and public-service activities that make a positive difference to society.

But we also need your help. In the budget deliberations that will take place in the months ahead, we will need members of the UCSC community to join us in advocating not only for this campus, but for the University of California system. Our message will be simple: The state's continued investment in UC is critically important to today's students, to those who will enroll in future years, and to our society as a whole.

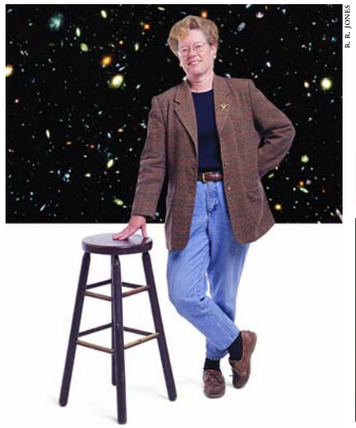
We also will need the continued support of the many contributors who have made it possible for UCSC to achieve national distinction for the quality of its people and programs. The private support we receive from alumni, parents, other individuals, foundations, and corporations provides crucial funding for undergraduate scholarships and graduate fellowships, research activities, and the classrooms, labs, and other facilities in which our students prepare for their futures.

By working together now, UC Santa Cruz will not only weather this budgetary crisis, it will continue to build upon its legacy of innovation, excellence, and achievement.

M.R.C. Greenwood
Chancellor

If you are interested in legislative advocacy efforts, please contact our Government and Community Relations Office; to learn about private gift support, please contact our Development Office. Both offices can be reached by calling 800-933-SLUG (7584).

Campus Update


R. R. JONES


COURTESY TERRIE WILLIAMS


MBARI

Clockwise, from left: Sandra Faber, Terrie Williams, and Marcia McNutt

Three UCSC professors included in top-50 list of women in science

The popular science magazine *Discover* has named three women on the faculty of UCSC among the "top 50 women scientists in the country" in an article in the magazine's November issue.

The issue features a series of articles about how women fare in science and celebrates the accomplishments of women scientists.

The three UCSC scientists featured in the magazine are Sandra Faber, University Professor of astronomy and astrophysics; Terrie Williams, professor of ecology and evolutionary biology and the Ida Benson Lynn Professor of Ocean Health; and Marcia McNutt, professor of Earth sciences at UCSC and the president and CEO of the Monterey Bay Aquarium Research Institute. (McNutt is identified in the magazine by her primary affiliation with MBARI.)

"I'm impressed that three women scientists from UCSC are represented on this list, and I think it reflects the fact that UCSC's science faculty is absolutely first class," Faber said.

Faber is renowned for her research on the formation and evolution of galaxies and the evolution of structure in the universe. She has also been involved in the development of the Hubble Space Telescope and the Keck Observatory.

Williams, an expert in animal physiology and energetics, has studied a wide range of marine mammals, including dolphins, seals, sea otters, and whales. Her research projects include studies of Weddell seals in Antarctica, Steller sea lions in Alaska, and sea otters in Alaska and California.

McNutt is a geophysicist whose research focuses on the physical properties of the Earth beneath the oceans. Recent projects include the history of volcanism in French Polynesia and how it relates to broadscale convection in the Earth's mantle, continental breakup in the western United States, and the uplift of the Tibet plateau.

Wind Ensemble to perform in Sydney

The UCSC Wind Ensemble has been invited to represent the United States at the 2003 International Music Festival to be held this June at the renowned Opera House in Sydney, Australia.

An offshoot of the 1986 World Expo held in Brisbane, the festival brings a variety of concert bands, choirs, orchestras, jazz, and string ensembles to perform in a week of festivities—beginning in Canberra, the capital of Australia, and culminating with a performance at the 2,600-seat Concert Hall of the Sydney Opera House.

The festival draws from Pacific Rim countries including the U.S., Japan, New Zealand, Australia, China, Singapore, and Taiwan.

Under the direction of Robert Klevan, a music lecturer at UCSC, the Wind Ensemble performed in 2001 at Carnegie Hall. "We received a standing ovation from an audience of strangers at Carnegie Hall," Klevan said. "It was thrilling. Our ensemble never played as well as they did that day."

That appearance led to several inquiries from other venues and festivals, including the festival in Sydney.

The 67-member ensemble's hour-long set at the Opera House will feature *Suite Français* by Darius Milhaud and David Stanhope's *Folk Songs for Band.*

The Wind Ensemble was founded in the fall of 1998 with only 18 members.


TRACEY SCHRAMM

The 67-member Wind Ensemble will perform an hour-long set at the Sydney Opera House in June.

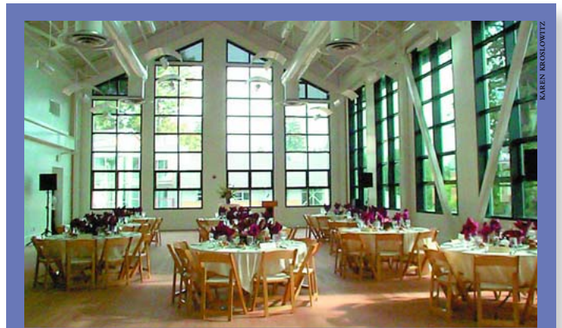
UCSC center part of project to improve science education

The new teacher center at UCSC will play a key role in a five-year, $7.5 million National Science Foundation (NSF) program to develop and implement an online mentoring program for beginning science teachers.

The project, which aims to improve student learning by bolstering the effectiveness of new middle and high school science teachers, is a perfect fit for the New Teacher Center (NTC), which is dedicated to improving education by promoting the development of an excellent teaching force.

The NTC's successful model of teacher induction provides mentoring support of an experienced teacher to all new teachers during their first two years in the classroom.

This NSF project will tap NTC to design and administer an e-mentoring system to support beginning teachers in six urban California school districts and a consortium of rural districts in Montana.


ZELLA VANDER SCHUYT

The University Center, a place where faculty, staff, alumni, donors, and others involved in the operation and support of the campus can gather for lunch or just to socialize, opened in late January. Located above the Colleges Nine/Ten Dining Commons, the new center provides attractive space for meetings, conferences, and other events, in addition to restaurant and lounge services. Memberships may also be purchased to the center, entitling members to a number of benefits. For more information, go to: *ucenter.ucsc.edu.*

UCSC plays role in new genome effort

Researchers in UCSC's Center for Biomolecular Science and Engineering (CBSE) made significant contributions to the analysis of the mouse genome sequence announced recently by the international Mouse Genome Sequencing Consortium.

The consortium published a draft sequence of the mouse genome—the genetic blueprint—together with a comparative analysis of the mouse and human genomes.

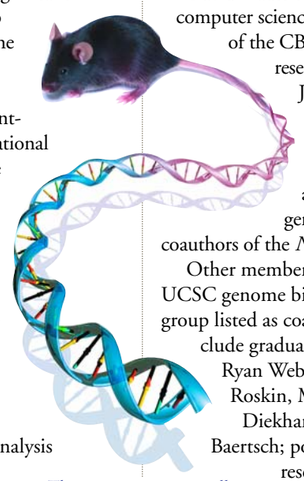
The paper appeared in the December 5 issue of *Nature.*

It's the first time that scientists have compared the contents of the human genome with that of another mammal.

This milestone is also significant given the laboratory mouse's importance as a model in biomedical research.

David Haussler, professor of computer science and director of the CBSE, and CBSE research scientist Jim Kent worked on the analysis of the mouse and human genomes and are coauthors of the *Nature* paper.

Other members of the UCSC genome bioinformatics group listed as coauthors include graduate students Ryan Weber, Krishna Roskin, Mark Diekhans, and Robert Baertsch; postdoctoral researcher Terrence Furey; software project manager Donna Karolchik; and software developers Angie Hinrichs and Matt Schwartz.



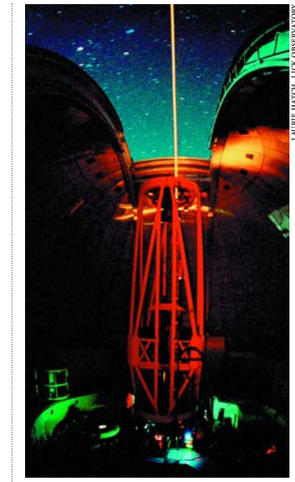
The mouse carries virtually the same set of genes as the human, making it invaluable in research. Image: National Institutes of Health

UCSC receives $9.1 million to establish adaptive optics lab

UCSC has received a grant of $9.1 million from the Gordon and Betty Moore Foundation to establish a Laboratory for Adaptive Optics. The new laboratory strengthens UCSC's position as an astronomy powerhouse and a national center for research on the exciting new technology of adaptive optics. The grant is the largest contribution from a private foundation in UCSC's history.

The Laboratory for Adaptive Optics will develop innovative instrumentation for the application of adaptive optics technology in astronomy. Adaptive optics sharpens the vision of ground-based telescopes by removing the blurring effects of turbulence in the Earth's atmosphere.

The new lab complements the Center for Adaptive Optics (CfAO), established with a $20 million grant from the National Science Foundation and headquartered at UCSC. CfAO focuses on the advancement of adaptive optics technology in astronomy and vision science.


LAURIE HATCH, LICK OBSERVATORY

The adaptive optics system at Lick Observatory includes the "laser guide star," shown in this photo.

The new lab "will play a major role in the future of astronomy and other fields where high-quality images are important," said Ed Penhoet, senior director of science and education at the Moore Foundation.

Claire Max, associate director of CfAO, is the lead scientist on the Moore Foundation grant; UC Observatories/Lick Observatory director Joseph Miller and CfAO director Jerry Nelson are coprincipal investigators.

Chancellor's visit emphasizes Indian and South Asian studies

In December, Chancellor M.R.C. Greenwood represented the campus at a series of events in New Delhi, India. Hosted by UCSC Foundation trustees Anu Luther and Kamil Hasan and his wife, Talat Hasan, and facilitated by UCSC history professor Dilip Basu, the visit provided opportunities to renew connections made during a 1998 visit.


ELIZABETH LEWIN

Chancellor Greenwood and Anu Luther

The chancellor met with the president of India and other leaders in government and education, and she delivered an address at the prestigious India International Centre. A highlight of the trip was the wedding of Minal Hasan, the daughter of Kamil and Talat Hasan.

$2 million grant funds research on Monterey Bay ecosystem

UCSC HAS RECEIVED a grant of $2 million from the National Oceanic and Atmospheric Administration (NOAA) to establish a Center for Integrated Marine Technologies. The center will use new technological approaches to study the processes driving the highly productive coastal upwelling ecosystems along the California coast.

The aim is to establish the scientific basis for effective monitoring and management of these ecosystems and the fisheries and other resources associated with them.

The center brings together an interdisciplinary group of researchers from five institutions around Monterey Bay, with UCSC as the lead institution. Other partners are the Monterey Bay Aquarium Research Institute, the Naval Postgraduate School in Monterey, Moss Landing Marine Laboratories, and the National Marine Fisheries Service Laboratory in Santa Cruz.

LAURA PEDERSON

Instrumented, deep-ocean moorings are one source of data for the Center for Integrated Marine Technologies, led by UCSC.

The Monterey Bay National Marine Sanctuary is also involved, said Gary Griggs, a principal investigator on the grant and director of UCSC's Institute of Marine Sciences.

"Our goal is to develop an integrated view of these highly productive coastal ecosystems, using the Monterey Bay sanctuary as kind of a big laboratory," Griggs said. "Part of the project will be to put all the data together in a way that is accessible and can be visualized, both for scientists and for public user groups."

The California coast is one of just five major coastal upwelling regions in the world. While they make up only one-tenth of a percent of the ocean's surface area, upwelling regions account for 95 percent of the global marine biomass and more than 21 percent of the world's fisheries landings.

COURTESY DAVID SWANGER

David Swanger, a professor of education and creative writing, first met Carver at UCSC when they both arrived on campus to teach in 1971.

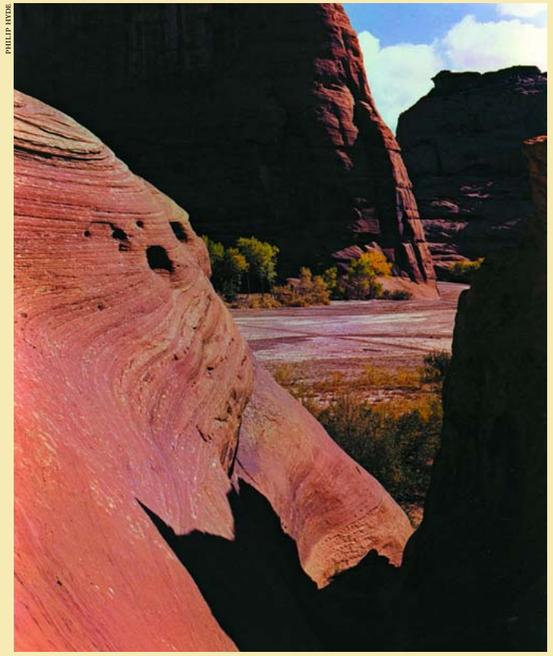
Raymond Carver letters donated to UCSC

A COLLECTION OF letters from renowned American short story writer and poet Raymond Carver has been donated to McHenry Library at UCSC.

The donation from UCSC professor of education and creative writing David Swanger consists of 26 letters, notes, and cards he received between 1977 and 1984. The correspondence documents a period in Carver's life when he made the transition from being a relatively obscure writer to becoming a commercially successful and well-known author.

Carver, who died of brain cancer in 1988, is widely credited with revitalizing the American short story more than anyone since Ernest Hemingway and Flannery O'Connor.

"The contents are both literary and personal," noted Swanger, a poet and longtime friend of Carver. "They include Carver's reflections on my writings, thoughts about his own work, personal insights into his life when he stopped drinking and when he met the well-known poet Tess Gallagher, details about family relationships, jobs, and economic success."



PHILIP HYDE

The Canyon de Chelly National Monument in Arizona, one of photographer Philip Hyde's many subjects

Renowned photographer, *author, and environmentalist* PHILIP HYDE *has donated the archive of his 50-year career, including prints, negatives, correspondence, and field notes, to UCSC. "Philip Hyde, following Ansel Adams and Edward Weston, is one of four or five great photographers of the western landscape," said Allan Dyson, University Librarian. The Philip Hyde Photographic Archive will reside in Special Collections at the UCSC Library, which is located at the center of UCSC's 2,000-acre, redwood forest campus. "I liked the idea of my archive being held in the library of a university that has ties to the environment and has a strong environmental program," said Hyde.*

Alumni Association names award winners

A PULITZER PRIZE–winning journalist, a Writing Program lecturer, and a production director have been named winners of the UCSC Alumni Association's highest honors for 2002–03.

In ceremonies that took place on February 1, Martha Mendoza received the Alumni Achievement Award; Conn Hallinan, the Distinguished Teaching Award; and Joseph Weiss, the Outstanding Staff Award.

The Alumni Council, the association's governing body, selected the winners based on nominations from students, faculty, alumni, and staff.

Mendoza is an Associated Press reporter who shared the 2000 Pulitzer Prize for Investigative Reporting for a story about a massacre in the opening weeks of the Korean War. She is the third UCSC graduate to win a Pulitzer Prize. The story won numerous other awards, and Mendoza was selected for a John S. Knight Fellowship at Stanford, where she completed the book, *The Bridge at No Gun Ri: A Hidden Nightmare from the Korean War,* with coauthors and Pulitzer winners Charles J. Hanley and Sang-Hun Choe.

Martha Mendoza

Conn Hallinan

Joseph Weiss

ALL PHOTOS: DON HARRIS, UCSC PHOTO SERVICES

A 1988 Kresge College graduate (B.A.) with an individual major in journalism, Mendoza has returned to UCSC's Writing Program as a journalism lecturer.

Her colleague and former teacher, Conn Hallinan, is noted for his outstanding lectures and his untiring support of student writing. He has been inspiring students to follow him into journalism since he began as a lecturer in the UCSC Writing Program in 1982. In nominating Hallinan for the Distinguished Teaching Award, former student Mark West said "his writing advice is so beneficial it's addictive." Hallinan is also provost of Kresge College.

Staff winner Joseph Weiss is technical production director and operations manager for the Theater Arts Department. Weiss was described as "the rock upon which this department is built," in a nomination letter from Anana Integre, former administrative manager of theater arts.

Undergrad takes tech skills to Fresno youth

SOCIOLOGY MAJOR Mary Jane Skjellerup is reaching out by reaching back—to Fresno High School, that is.

Skjellerup is using the power and allure of technology to introduce Hmong and Latino youth in her native Fresno to what's available for them at the university.

Skjellerup, a graduate of Fresno High School and a senior at UCSC, has launched the Community and Technology Leadership Program to encourage Fresno students from disadvantaged backgrounds to get on track for college.

She uses hands-on training in sophisticated digital media technology, mentoring, and academic advising to give teenagers a taste of what's available to college students.

"I want to encourage kids to come to the university by giving them skills that will boost their confidence and make them feel unique," said Skjellerup.

With little more than her own commitment and minimal start-up funds from UCSC's Global Information Internship Program, Skjellerup developed a proposal that Fresno High administrators jumped at.

The school's business computer technology teacher, Helen Herzog, and her department chair, Delaine Zody, selected six high school students who came to UCSC for a two-day summer workshop. Tapping the two-inch-thick training manual she put together for the workshop, Skjellerup describes a daunting itinerary that covered admissions, a tour, web and graphic design instruction, and a one-day digital film and editing course.

Mary Jane Skjellerup

ANN GIBB

The students returned to high school this past fall, where they worked with Skjellerup and their teachers on community-service projects to prepare oral histories of members of the Hmong and Latino communities in Fresno.

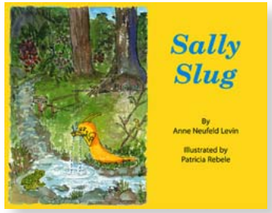
Campus mascot inspires children's book

A NEW CHILDREN'S BOOK explores a day in the life of a colorful banana slug family that lives on the UCSC campus.

All proceeds from *Sally Slug* benefit the UCSC Foundation and provide for art history purchases and exhibits in the library.

The book is written by Anne Neufeld Levin and illustrated by alumna Patricia Rebele. Both serve on the Foundation and are generous supporters of UCSC.

To purchase the book, go to: *slugstore.ucsc.edu.*



Fisheries rely on accurate counts

Concerns about the sustainability of many West Coast fish populations have led to increasingly tight restrictions on the fishing industry, angering some fishers whose livelihoods are at stake and highlighting the importance of accurate assessments of commercial fish stocks.

To help meet the demand for fishery scientists with expertise in the quantitative assessment of fish populations, UCSC and the National Marine Fisheries Service (NMFS) Santa Cruz Laboratory have established the Center for Stock Assessment Research (CSTAR).

CSTAR is funded by NMFS to support UCSC undergraduate and graduate students and postdoctoral researchers working in the areas of quantitative fish population dynamics and fishery stock assessment.

In addition to training scientists, CSTAR supports research on advanced stock assessment methods, said Marc Mangel, a professor of applied math and statistics at UCSC who heads the CSTAR program with NMFS biologist Alec MacCall.

Progressively tighter restrictions have been imposed on the groundfish fishery over the past five years to allow certain populations to recover from overfishing. These restrictions are having serious economic impacts, which might have been avoided if scientists had understood the fishery 20 years ago as well as they do now, MacCall said.

"We are facing a crisis here on the West Coast that is comparable to the collapse of the sardine fishery in the 1940s and '50s," MacCall said. "The only hope for avoiding this kind of disaster in the future is to have really talented people on the job keeping track of things. It all hinges on our ability to determine how many fish are out there and how much is safe to catch on a sustainable basis."

Fulbrights send faculty to Indonesia, Korea

Two faculty members at UCSC have been honored with Fulbright Scholar Awards for the 2002–03 academic year.

Kathy Foley, professor of theater arts, and Hi Kyung Kim, associate professor of music, join approximately 800 U.S. faculty and professionals who are traveling abroad to 140 countries this year through the Fulbright Scholarship Program.

The purpose of the program, established by the late Senator J. William Fulbright of Arkansas, is to build mutual understanding between the people of the United States and countries around the world. Fulbright Scholars are chosen on the basis of academic or professional achievement and because they have demonstrated extraordinary leadership potential in their field.

Foley will travel to Indonesia this spring to gather information for a book on the relationship between Indonesian puppet-style performance and mask presentation. Her research will include interviews with puppeteers, dancers, and scholars.

As part of her Fulbright Scholarship grant, Hi Kyung Kim traveled to Korea in October to teach two courses at the College of Music at Seoul National University, conduct research on Korean vocal art songs, and do fieldwork on the Shamanistic Funeral March.

Hi Kyung Kim, left, and Kathy Foley

COURTESY HI KYUNG KIM

CLAUDIA ORNSTEIN

New award honors three generations of UCSC scholarship

An innovative award, linking three generations of academic excellence at UCSC, was presented for the first time during a Stevenson College Night in October.

History lecturer Bruce Thompson is the recipient of the first John Dizikes Award, established this year by the Humanities Division to honor outstanding teaching by humanities faculty, and named in honor of one of UCSC's founding faculty members.

In addition to his $3,000 award, the recognition enabled Thompson to select an undergraduate to receive a $3,000 scholarship. Thompson chose literature major Shelby Polakoff as the scholarship recipient.

"I remember seeing a flyer announcing the establishment of the John Dizikes Award," said Thompson, "and I thought it was a wonderful idea. I think John's one of the most extraordinary teachers I've ever met. It never occurred to me that I'd be the first recipient of an award named for him."

Dizikes, a professor emeritus of American studies, came to UCSC in 1965. A winner of the UCSC Alumni Association's Distinguished Teaching Award, Dizikes has published numerous books and articles, served as Cowell College provost, and mentored thousands of students during his career at UCSC. He continues to be an active member of the campus community.

In announcing Thompson as the Dizikes Award winner, dean of humanities Wlad Godzich cited Thompson's intellectual influence on undergraduates and graduates, his support and advising of large numbers of students, and his ability to teach many different topics in history.

ANN M. GIBB

Bruce Thompson, left, Shelby Polakoff, and John Dizikes

UCSC publishes book on work of architect Marcel Sedletzky

The first book on the life and work of Monterey Bay architect Marcel Sedletzky has been published by UCSC. *Marcel Sedletzky: Architect and Teacher* (Wild Coast Press, UC Santa Cruz Library, 2002) presents a personal view of a designer whose achievements went relatively unrecognized during his lifetime.

"Sedletzky rarely talked about himself; in fact I learned that even his friends and colleagues didn't know much about his life. But I found a consistent appreciation for his professional rigor, his insistence that things be done 'right'," said author Bill Staggs, who spent three years researching and writing *Marcel Sedletzky.*

Sedletzky's architecture is recognized for combining modernity with a sensitivity to the views and terrain of the California landscape. His style is a "blend of Le Corbusier's forceful modernism and Frank Lloyd Wright's organic fusion of housing form with place," writes John King, the *San Francisco Chronicle*'s urban design critic, in his introduction to *Marcel Sedletzky.*

Sedletzky's Tree House, *Carmel, 1964*

COURTESY SEDLETZKY ARCHIVES

In Memoriam

Raymond F. Dasmann, a founder of international environmentalism and a professor emeritus of ecology, died in November in Santa Cruz. Dasmann had been in ill health for several years. The cause of death was pneumonia. He was 83.

JENNIFER MCCUNCLEY

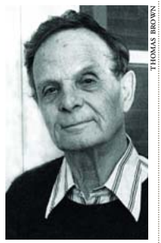
Dasmann was the author of more than a dozen books, including *The Destruction of California, Environmental Conservation, Wildlife Biology,* and *California's Changing Environment.*

Dasmann made an impassioned plea for sustainability on a planet with limited resources. In addition to his academic career, Dasmann did pioneering work in the 1960s with the United Nations Educational, Scientific, and Cultural Organization (UNESCO), where he helped launch the Man and the Biosphere program. For most of the 1970s, he worked in Switzerland as a senior ecologist for the International Union for the Conservation of Nature. He joined the faculty at UCSC in 1977 and retired in 1989.

Dasmann's efforts earned him many major international awards, including the top conservation medals of the World Wildlife Society and the Smithsonian Institution.

A memorial was held in January. Contributions in Dasmann's memory may be sent to the attention of Lia Hull at the Golden Gate Biosphere Reserve Association, Jasper Ridge Biological Preserve, Stanford University, Stanford, CA 94305.

Norman O. Brown, professor emeritus of humanities and author of *Life Against Death* and *Love's Body,* died in October at his residence in Santa Cruz. He was 89. Brown's influential scholarship and teaching encompassed the classics, theology, history, psychology, sociology, and literature, among other disciplines. "He was a liberating, visionary scholar, the successor in the 20th century to Blake and to Nietzsche," said Jerome Neu, professor of philosophy at UCSC and a longtime colleague of Brown.



THOMAS BROWN

Brown taught a variety of courses, mostly through the History of Consciousness Department, until his retirement in 1981. His last two books were *Closing Time* (1973), and *Apocalypse and/or Metamorphosis* (1991), a collection of essays he had written over the course of 30 years.

Frank X. Barron, professor emeritus of psychology and one of the campus's most distinguished faculty members, died in October following complications from a fall. He was 80 years old.

UCSC PHOTO SERVICES

An internationally renowned figure in the study of creativity and personality, Frank Barron was a major contributor to the development of UCSC and its Psychology Department.

Frank Barron came to UCSC in 1969, was a fellow of Porter College, and served as chair of the Psychology Department. He retired from UCSC in 1992.

Contributions for a student research award in Barron's honor may be directed to the UCSC Foundation, care of John Leopold, Social Sciences 1, Faculty Services, University of California, Santa Cruz, CA 95064. Please include "Frank Barron Memorial Award" in the check's memo line.

Norma Juliet Wikler, who retired from UC Santa Cruz after teaching from 1971 to 1991, died in May at her home in Costa Rica. She was 60. A memorial for the professor emerita of sociology was held in June in New York City.

While at UCSC, Wikler coauthored the 1979 book *Up Against the Clock: Career Women Speak on the Choice to Have Children,* which explored the decisions career women make about whether to have children, become single mothers, or remain childless. Betty Friedan heralded the book as "delineating the problems and conflicts of young women living with the options the Women's Movement fought for."

Louis Owens, a former UCSC professor of literature, died in July in New Mexico. Owens's focus during his time at UCSC, from 1990 to 1994, was American literature, Native American literature, and creative writing. He received the Alumni Association's Distinguished Teaching Award in 1992.

Considered the country's leading critical interpreter of Native American literature, Owens received several top book awards for his fiction and scholarly work and had his novels translated into other languages.

UC Santa Cruz associate professors Gregory Gilbert (environmental studies) and Ingrid Parker (biology)

PHOTO: R. R. JONES; COCONUT PALM MOLA (DETAIL) COURTESY OF GREGORY GILBERT

What's Killing Panama's Coconut Palms?

UCSC sleuths hot on the trail of a mysterious disease

By Jennifer McNulty

GRACEFUL COCONUT PALMS are a fixture of the tropical landscape from Hawaii to Puerto Rico. Along Panama's scenic Caribbean coast, the statuesque trees dot the shoreline like pearls on a necklace.

The Kuna Yala region of Panama, made up of a 400-kilometer stretch of sandy beaches and 300 nearby islands, remains largely undiscovered by tourists. A semi-independent republic established in 1925, Kuna Yala is home to the Kuna Indians, an indigenous group whose subsistence lifestyle remains largely unchanged from the ways of their ancestors, who first inhabited the area in the 1600s. Each morning, islanders paddle dugout canoes short distances to the mainland to collect freshwater, harvest coconuts, and work small farm plots. Women in colorful blouses adorned with their hand-appliquéd needlework sit before thatch-roofed huts, tending children and preparing coconut-based dishes over open fires.

But in 1994, a mysterious disease began ravaging Panama's coconut palms, stunting new growth, stiffening leaves, and quickly killing many of the towering 60-foot trees. Unlike in Florida, where an outbreak of disease in the 1980s threatened the state's famous palm trees and triggered a well-funded and organized response from horticultural researchers, there was no outcry as this new disease took hold in Panama, jeopardizing the diet and economy of the Kuna.

Instead, a pair of adventurous young UC Santa Cruz plant scientists took up the challenge on their own time, slowly gaining the trust of the Kuna as they tracked the disease for several years. As the urgency of their undertaking grew, these dedicated researchers had to overcome the shortcomings of their training and follow the path of environmental science today—where ecological crises demand top-notch scientific skills and knowledge of anthropology, economics, political science, and sociology. As in many epidemics, answers remain elusive. But the researchers have compiled an arsenal of data that will prove invaluable in their battle to assist this little-known indigenous community.

GREGORY GILBERT

THE DEAD AND THE DYING: An epidemic of *Porroca* takes its toll on Kuna Yala's valuable coconut palms.

GREGORY GILBERT was a plant pathologist doing postdoctoral research with the Smithsonian Tropical Institute in Panama in 1994 when agronomists in Panama's Department of Agriculture made a troubling observation: Coconut palms in the Panama Canal region were getting sick and dying. Their new leaves were coming in dwarfed and deformed, then dying, leaving "headless" trunks that looked like the skeletal remains of the dead. Gilbert and his government colleagues immediately feared what they would later confirm: An unknown pathogen that has wiped out thousands of palms in Colombia since the 1950s was gaining a foothold in central Panama.

The disease, nicknamed *Porroca* (pore-OH-kuh), an indigenous word for "little leaf," had traveled in spurts west from Colombia. Until 1994, it had remained isolat-

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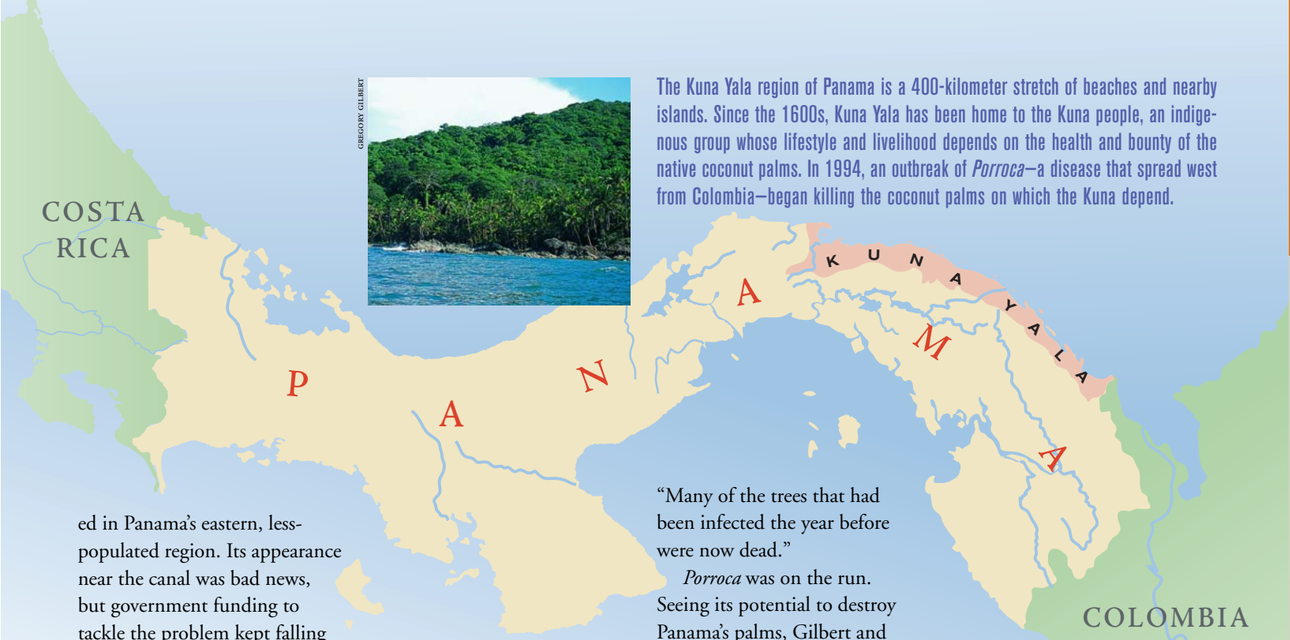
GREGORY GILBERT

The Kuna Yala region of Panama is a 400-kilometer stretch of beaches and nearby islands. Since the 1600s, Kuna Yala has been home to the Kuna people, an indigenous group whose lifestyle and livelihood depends on the health and bounty of the native coconut palms. In 1994, an outbreak of *Porroca*—a disease that spread west from Colombia—began killing the coconut palms on which the Kuna depend.



ed in Panama's eastern, less-populated region. Its appearance near the canal was bad news, but government funding to tackle the problem kept falling through.

In 1996, Gilbert returned to the United States to take a faculty position at UC Berkeley, promptly securing a small grant so he could return to Panama to study *Porroca*. Gilbert enlisted the help of Ingrid Parker, a postdoctoral biologist doing work on the effects of nonindigenous organisms on native plants. What began as professional compatibility eventually grew; they married in 2001.

Gilbert and Parker, now associate professors of environmental studies and biology, respectively, at UCSC, first traveled to Panama together in 1998, when they began mapping each and every coconut palm in Kuna Yala. "We needed to know the baseline distribution of *Porroca* in the area," said Gilbert.

The infestation appeared to be in the early stages. They documented the "patchy" presence of *Porroca* in the Kuna Yala—some areas were devastated, but most were largely untouched—and they saw the need for a comprehensive evaluation of the region's coconut palms. Parker returned to California, while Gilbert stayed behind for a week of vacation that would prove fortuitous for everyone.

During his stayover, a former colleague asked Gilbert to give an impromptu lecture about *Porroca* to a group of ecotourists on a stopover in the Panama Canal. One visitor was so impressed by what she heard that she cornered Gilbert and asked for a funding proposal. She wanted to help him conduct the kind of long-term research that would "make a difference" (see story, p. 13).

Within weeks, she had provided $20,000 in funding with a promise of more to come, and Gilbert and Parker were back in business. During the following three years of intensive fieldwork, they mapped 200,000 trees, noting which were diseased and which appeared healthy. Early on, the hardest-hit areas were suffering from an infection rate of about 20 percent. By the next year, however, the infection rate in some locations was up to 50 percent. "It was massive," said Gilbert. "Many of the trees that had been infected the year before were now dead."

Porroca was on the run. Seeing its potential to destroy Panama's palms, Gilbert and Parker needed to act fast. They speculated that humans might be transmitting the disease, perhaps on machetes, and reached out to the Kuna, hoping to halt the disease and, in the process, help preserve a way of life.

Self-sufficient and wary of outsiders, the Kuna were initially skeptical of working with Gilbert and Parker. Culturally, the Kuna have a deep respect for the land.

Community cooperatives clear small parcels along the coast to cultivate coconuts, bananas, plantains, fruit, and root crops like yucca, but old-growth forests still dominate the interior. In 1983, the Kuna set aside a 148,000-acre expanse of virgin rainforest along the southern border of their holdings as a territorial defense, becoming the first indigenous group in Latin America to establish, in effect, a nature reserve. The move attracted widespread support from international conservationists.

But it is largely the coconut palm that ensures the success of the Kuna's subsistence lifestyle. With a population of 32,000, the Kuna rely on coconuts as their top cash crop and only export. In 1990, they sold 5.4 million coconuts, largely to Colombia, where coconut oil is a key ingredient in soap and perfume. When the market for coconuts crashed in the early 1990s, exports plummeted to 3.2 million. The Kuna turned to commercial fishing to replace the lost income and have so far avoided the temptations of commercial forestry and mining.

But their commitment to conservation could be tested if economic pressures mount. "They have a great tradition of conservation, largely because they've had other sources of income," said Gilbert. "If they lose the production of coconuts because of disease, that could push them to do other things. They value their forest, but they can only afford to preserve it if they're able to survive by other means."

Gilbert and Parker approached the Kuna with respect, but they

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New UCSC Research Center Factors Human Needs into Environmental Solutions

COURTESY ERNESTO MENDEZ

UCSC doctoral candidate in environmental studies Ernesto Mendez is working with peasant coffee farmers in El Salvador to promote sustainable agriculture in the region.

The unparalleled pace of environmental degradation in the tropics cries out for intervention, and one of UCSC's newest research centers is helping transform the way universities and policy makers respond to the crisis.

The Center for Tropical Research in Ecology, Agriculture, and Development (CenTREAD) is preparing undergraduate and graduate students to integrate human needs into research that addresses complicated environmental problems in the tropics.

"As we learn about the ecological consequences of industrialization, resource consumption, and a booming population, we're seeing that solutions are inextricably linked to issues of social justice, economic development, and governance," said CenTREAD codirector Karen Holl, an associate professor of environmental studies at UCSC and coholder of the Pepper-Giberson Chair. "Solutions will require scientific training and research, but also an understanding of cultural, political, and economic systems."

In Panama, CenTREAD codirector Gregory Gilbert and biologist Ingrid Parker's ability to conduct scientific research could have been jeopardized if they weren't sensitive, adept, and dedicated enough to overcome problems posed by the unique challenges of working closely with the indigenous Kuna people. They experienced firsthand the need for environmental scientists to broaden their academic preparation.

Established in 2000, CenTREAD builds on the expertise of UCSC's faculty, whose commitment to interdisciplinary scholarship has attracted a "critical mass" of researchers and graduate students drawn to this new approach to ecological problem solving.

For doctoral candidates like Ernesto Mendez, whose dissertation in environmental studies focuses on ways to help peasant coffee farmers in El Salvador, CenTREAD represents a high-level endorsement of integrated research. "I've had professors almost apologize to me because they see what's involved," said Mendez. "But I feel lucky. We need to train people to do this, and I really appreciate the willingness and commitment of faculty to put themselves out there for us."

Mendez, whose father and grandfather farmed in El Salvador, is at the forefront of efforts to bring Earth-friendly farming to the tropics. For more than five years, he has shared his expertise in agroforestry and resource management with small-scale coffee farmers struggling to survive an international crash in coffee prices. Many are eager to diversify their plantations, but they lack the scientific knowledge to make changes, and they're unaware of niche marketing opportunities like those created by the shade-grown coffee movement.

Blending the science of sustainable agriculture with an understanding of social needs is at the heart of Mendez's research—and at the heart of international efforts to protect what's left of tropical ecosystems. For example, Mendez's research has revealed a weakness in the shade-grown coffee certification program, which has created consumer demand for coffee grown on land that maintains certain levels of native tree biodiversity. Many small-scale coffee farmers are hesitant to participate because their livelihood depends on being able to harvest small amounts of timber for firewood and lumber, yet these growers represent "huge conservation potential" because nearly 80 percent of coffee in El Salvador is grown by small operators, according to Mendez.

"What we need is a compromise that would include more farmers, so they can participate in conservation efforts and take advantage of new marketing opportunities," said Mendez. "We have to compromise so farmers will also benefit. It's not just about saving trees."

Researchers working throughout the developing world are recognizing the need to incorporate broader knowledge of region-specific needs into their strategies to protect the environment. CenTREAD is offering specialists like Mendez, whose background includes a bachelor's degree in agronomy and a master's in agroforestry, training that encompasses fields like rural development sociology, political economy, and anthropology. The codirectors of CenTREAD are raising funds to support students from the tropics who want to come to UCSC, and to build a visiting scholars program to increase interaction and research collaborations between UCSC researchers and their counterparts in Latin America.

—Jennifer McNulty

For more information, visit centread.ucsc.edu.

had a lot to learn about Kuna identity and traditions. Early on, for example, the pair discovered the value of meeting with the chiefs, or *sahilas,* of each island and explaining their work. This ritual entailed waiting in dark bamboo huts, drinking ceremonial drinks, and speaking through a translator. (Although most *sahilas* can speak Spanish, all official business takes place in the local Kuna language.) Sometimes they were met with suspicion. "The first year, it was touch and go with the Kuna," recalled Parker. "For a long time, we were 'those gringos with binoculars.' "

As *Porroca* spread, though, the Kuna became more receptive to working with Gilbert and Parker, whose generosity and appreciation of Kuna culture eventually helped them forge strong bonds. The second year went more smoothly, particularly after the pair made a presentation to the national Kuna Congress and received an official letter of permission from the three *caciques,* or head chiefs.

Embracing the research effort, the Kuna Congress tapped Edgardo Soo, a Kuna native, to serve as a guide for Gilbert and Parker. The congress lent the team their boat, and Soo promptly became a full-time employee, establishing an invaluable cultural and scientific link between the scientists and the Kuna. "When we met, Edgardo had never touched a computer, but within six months he was collecting data, entering it on a spreadsheet, and sending it to us on e-mail," said Parker.

"It's been so exciting and interesting to get into the social aspects of the work," she added. "Living with the Kuna has given us a chance to see the world through an entirely different filter."

With Soo's help, the researchers launched an educational campaign, offering workshops and publishing brochures in Kuna and Spanish to help residents recognize symptoms of infection. The Kuna were encouraged not to move coconut plants or seeds, and Gilbert and Parker enlisted their help in reporting new areas of infestation.

Throughout 1999, *Porroca* continued to spread, "jumping" to isolated mainland areas and traveling significant distances to four previously untouched islands. The disease was not behaving as predicted, and the baffled research team was forced to drop the human-transmission theory.

Working with the Kuna, the researchers ramped up their efforts and introduced control strategies, hoping that cutting down infected trees and smoking out insect carriers of *Porroca* would curb its spread. Implementing these measures proved to be fraught with cultural taboos: Six months into the experiments, Soo revealed to Gilbert and Parker that many Kuna were reluctant to cut down diseased palms because they believe coconuts are spiritual beings. It was a reminder of the value of interdisciplinary training for natural scientists, who typically lack the social science background that can enhance their fieldwork (see story, p. 11). Still, with Soo's help, the Kuna became so enthusiastic about participating in the experiments that the researchers had to turn people away.

Nevertheless, the team's efforts to control *Porroca* proved ineffective. By July 2000, the disease had "exploded," appearing on 53 islands two and three kilometers from the mainland. "It was a massive infestation and became a national issue for the Kuna," said Gilbert.

Tracking *Porroca* was proving frustrating, recalled Parker. "We were dealing with this mysterious disease, and nobody knew what organism caused it," she said. "We were trying to understand it by looking at the pattern of its effects, and it wasn't adding up."

That frustration, coupled with her intimate knowledge of the people who stood to suffer if she failed, posed a new challenge for Parker.

JIM MACKENZIE

Famous for their hand-stitched *molas,* the Kuna presented this expression of gratitude to Gilbert.

"I wasn't prepared for how much pressure there would be to work on a problem when somebody is waiting for the answer," said Parker. "It's so outside the realm of basic science. With this project, it has always been, 'We need to know yesterday.' "

Having ruled out all of the "easy answers," Gilbert and Parker turned to Nigel Harrison of the University of Florida's Research and Education Center in Fort Lauderdale. Harrison, the preeminent researcher on phytoplasma disease of palms, took up the challenge and spent nearly a year trying to identify the infectious bacteria that was wiping out the Kuna palms. From preserved samples of the meristem, or growing part, of infected trees, Harrison was finally able to identify the offender, a previously unknown phytoplasma transmitted by a "piercing and sucking" insect probably smaller than a housefly.

Identifying the phytoplasma is an exciting breakthrough, but it begs the next question: Which insect actually carries the pathogen that causes *Porroca?* Gilbert estimates it could take a year to identify the disease-carrying pest by analyzing the DNA of phytoplasma inside the guts of thousands of possible vectors. If successful, that would open up a range of disease-control options, from trapping to selective pesticide use to using pheromones that interfere with insect reproduction.

Meanwhile, Gilbert and Parker are eager to turn their attention to analyzing the data they've compiled, having tracked the health of nearly 250,000 individual palm trees across hundreds of kilometers. With the "eyes and ears" of Kuna in the field, they will update their data every two years to construct the spatial analysis they hope will finally reveal what makes *Porroca* "explode" in some spots and fizzle in others.

That body of work is arguably the largest-ever epidemiological database of the spread of plant disease in the world. By comparison, ongoing monitoring of rust on North America's economically essential wheat crop lacks detail, and plant specialists studying sudden oak death in California can only dream of compiling such a thorough database, the value of which extends way beyond the *Porroca* infestation in Kuna Yala.

"It's pretty amazing," said Matteo Garbelotto, a forest pathologist and adjunct professor in UC Berkeley's Department of Environmental Science, Policy, and Management. "It's one of the best examples of the accumulation of scientific information about how plant disease spreads. It provides an invaluable baseline for sophisticated modeling that will help them discover meaningful variables, whatever they turn out to be—wind direction, temperature, rainfall, trading routes, or something else. Answers will come eventually."

Fortunately, their benefactor, who prefers to remain anonymous, is in for the long haul, having promised to fund the biannual trips that will enable Gilbert and Parker to see their project through to the end.

Gilbert and Parker have gotten another lucky break. Although they're not sure why, the *Porroca* epidemic seems to have stabilized. No major new infestations were identified in 2001, and a few sites actually disappeared due to the death or removal of diseased trees. "We saw a fair amount of recovery—10 to 20 percent of diseased trees had recovered," said Gilbert.

In the meantime, Gilbert and Parker sound at times almost apologetic about what they've accomplished. It's a ridiculous notion on many levels, not the least of which is that they've each pursued the *Porroca* project as a sideline to their primary research, squeezing in trips during quarter breaks and working without pay. Gilbert's primary research is on microbial ecology in tropical and temperate forest ecosystems, while Parker's current research focuses on pathogens among native and nonnative clovers on the California coast.

"We've gotten a really good start on this problem that deep down we always knew would be a long-term thing," said Parker. "But we all wish there'd been an easy answer."

What a Difference One Donor Can Make

Jane Carver* managed money for the federal government for 35 years, so she knows about red tape—and how to cut through it. That's precisely what she has done for UCSC researchers Gregory Gilbert and Ingrid Parker, who've been on the trail of *Porroca,* the puzzling disease that's killing coconut palms in Panama.

Since 1998, Carver has given more than $65,000 in no-strings-attached support to Gilbert and Parker's work. She first learned about *Porroca* as an ecotourist in Panama in 1998, when Gilbert gave a presentation to her travel group about the spread of the disease onto Kuna Indian land and the threat it posed to a proud people who depend on coconuts for food and income.

"When I heard him, I just thought 'Here's a fellow doing absolutely wonderful things, and he has to jump through all sorts of hoops to get the money he needs to do his work. That's awful,' " recalled Carver. "I worked for the government. I know about rules and regulations. They measure everything, and they send people to inspect you who know less than you do."

Carver decided then and there to help fund Gilbert and Parker's research. She asked Gilbert for an outline of what was needed, and within weeks she put a check in the mail. No fuss, no muss.

"I've always been more interested in what's outdoors than what's indoors," said Carver, speaking appreciatively of the beauty of the woods around her Boston-area home, a region that was completely deforested during the 17th and 18th centuries. "It seems that for anyone who does any reading, you'd want to do as much for sustainability as you can."

Carver's help has literally kept the *Porroca* project alive. Unbeknownst to Carver until recently, Gilbert and Parker have donated their time to make her money go as far as possible. "You cannot imagine how productive the two of them are," said Carver. "They get the maximum amount of work done for the absolute minimum amount of money."

For the researchers, Carver is a dream come true. She has complete confidence in their abilities and their judgment, she doesn't stipulate how the funds are to be spent, and she is committed to the project for the long haul.

"You can always find the money for one trip," said Gilbert. "What we needed when we met her was long-term support."

Carver, who has also traveled to Guatemala and Belize, calls the Kuna "wary of Westerners." She credits Gilbert and Parker with being "wonderful ambassadors for the Western world."

Carver herself is quite content to let Gilbert and Parker do the fieldwork. Having accompanied them on one trip, she said that was enough.

"You cannot imagine the heat, under the blazing sun in boots, pants, a long-sleeved shirt, and hat, with scissor grass up to your nose," she recalled, laughing at the memory of her misery. "Greg and Ingrid thought it was wonderful, and I thought I was going to die!"

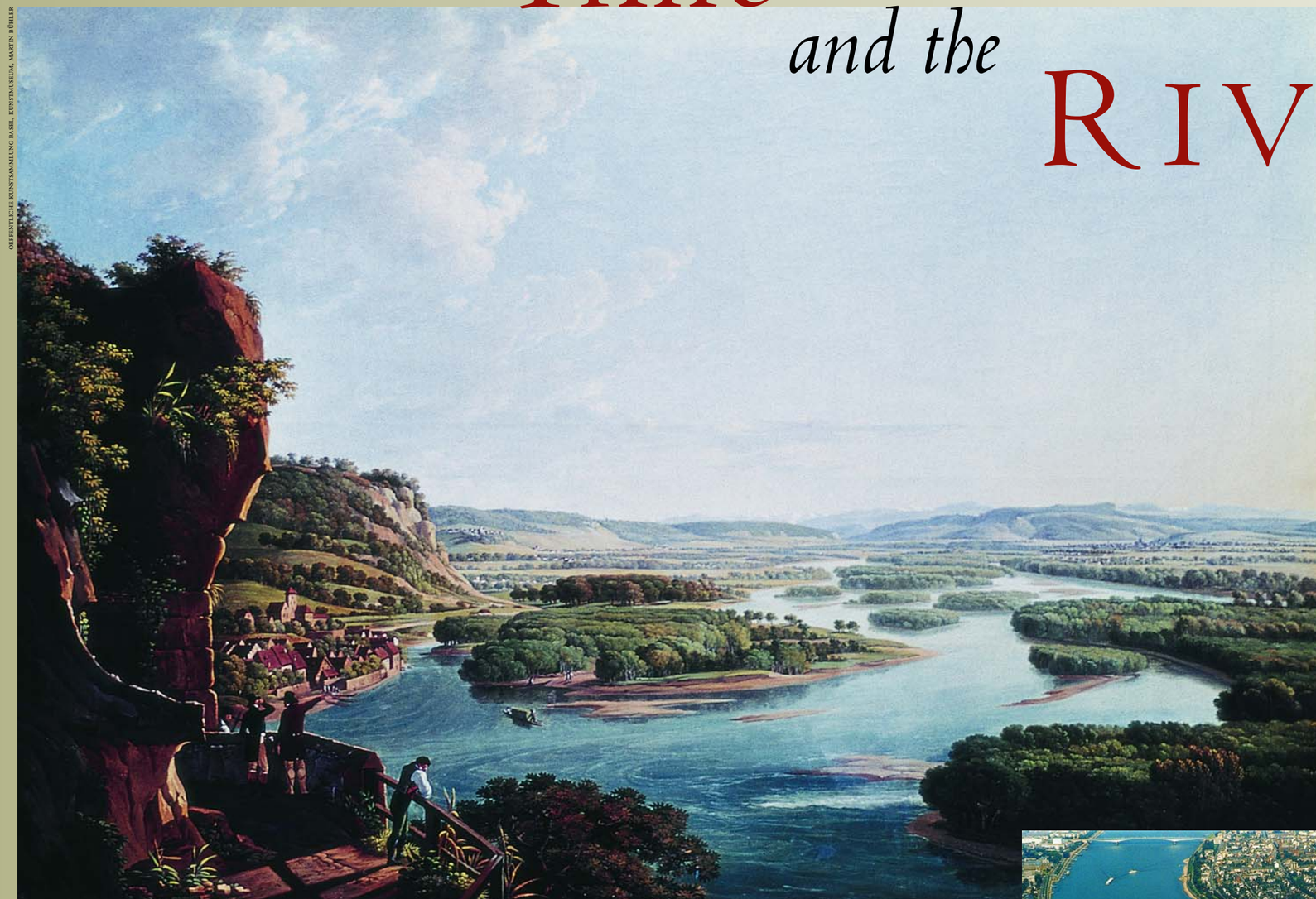
Carver recently gave an additional $20,000 to UCSC's CenTREAD project to support students doing conservation and agroecological research in the tropics (see story, p. 11). "When I look at the cost of taking a trip, I think my money might be better spent elsewhere, like on CenTREAD," she said.

Carver's story of generosity shows what a difference one person can make. "She doesn't see herself as a philanthropist," said Gilbert. "She just wanted to make a difference."

—Jennifer McNulty

** Jane Carver is not her real name; the donor prefers to remain anonymous.*

Time *and the* River



OFFENTLICHE KUNSTSAMMLUNG BASEL, KUNSTMUSEUM, MARTIN BÜHLER

The Rhine River, then and now

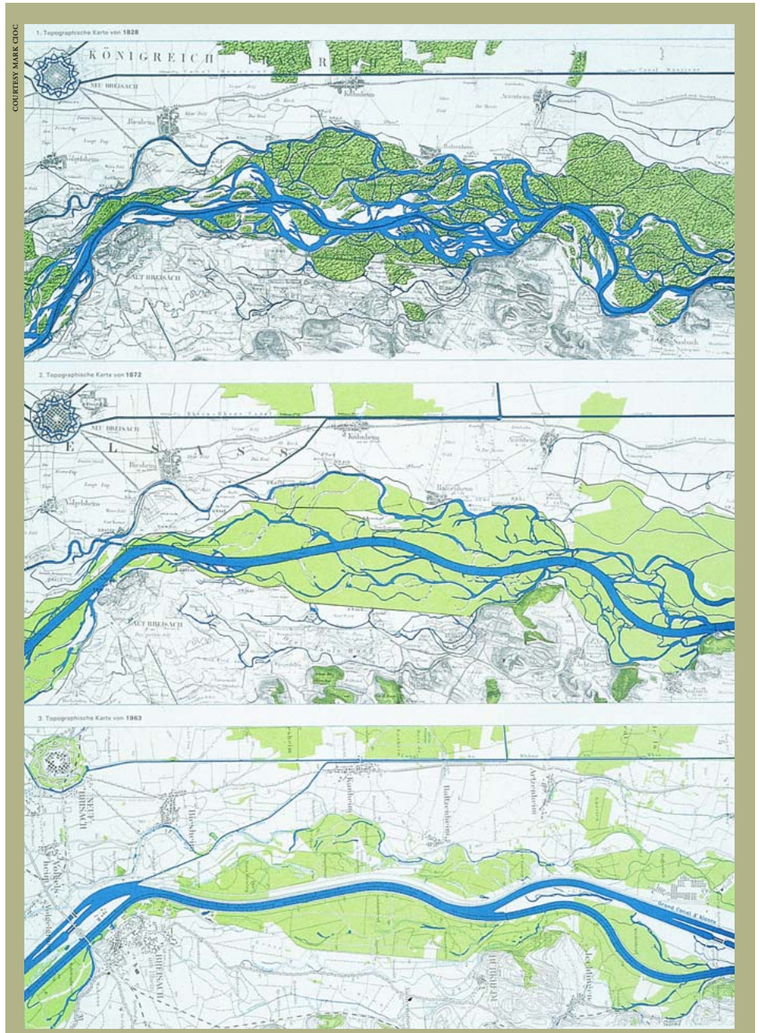
ABOVE: View up the Rhine to Basel from the Isteinerklotz, *a painting by Peter Birmann, c. 1819;* RIGHT: *a contemporary photograph of Bonn, Germany, on the Rhine.*

Tucked into a redwood forest in the Santa Cruz Mountains sits a little slice of Germany, a Tyrolean-style restaurant. One winter evening a guest asked if the dinner special, salmon with dill sauce, was an authentic German recipe. "No, it can't be," the waitress replied. "There are no salmon in Germany." But the guest persisted. Perhaps it was an old recipe, he wondered, because there had been salmon in the Rhine, western Europe's major waterway and the only river connecting the Swiss Alps to the North Sea.

In fact, annual salmon catches in the Rhine once ran at more than half a million, and German cookbooks featured plenty of salmon recipes. How could the waitress think there were no salmon in Germany? Because by 1950, well before the young woman was born, salmon had completely disappeared from the river.

Why the salmon vanished—and whether they can be reestablished—is part of a chilling environmental tale told by UCSC history professor Mark Cioc in his new book, *The Rhine.* Covering nearly 200 years of the river's recent history, Cioc's book describes a river sacrificed to economic progress, a story sadly familiar in industrialized nations. The book also describes more recent attempts by Rhine nations to reverse the devastating damage.

"Every country seems to insist on its sovereign right to go through the same problems with the environment, instead of learning from the experiences of other countries," says Cioc. "For



'Improving' the Rhine: *These maps illustrate the dramatic physical transformation of the Rhine River and its floodplain resulting from urbanization of the river over the 135-year period stretching from 1828 (top) to 1872 (center) to 1963 (bottom).*

a period of time as nations industrialize, they feel they have the freedom to do what they want to the water and air. First they pollute with impunity, and then later they try to clean up."

Cioc's tale begins with the 19th-century "Romantic Rhine," when a rich biodiversity extended from riverbed to floodplain's edge, and progresses to the Rhine's 20th-century incarnation as "Europe's romantic sewer." By then, the river had been transformed into a virtual canal, its bed straightened and lined with cement, its banks overdeveloped with factories and cities, its biodiversity shattered, and its channel so polluted that the liquid it carried could barely be called water.

"I spent about three years of my education living on the Rhine and ignoring it," says Cioc, who was a Fulbright Scholar at Mainz University in the 1970s. Years later, he discovered poignant hints of the Romantic Rhine along some river stretches, especially in places where centuries-old boat towpaths have been converted into bicycle trails. In the early 1990s, Cioc was cycling on a former towpath along the Rhine when the idea for his book came to him. "These bike paths are quite close to the river, and that makes them ideal for observing what has happened to the Rhine over the past two centuries," says Cioc.

The Rhine springs up in the Swiss Alps and flows north across Europe, through Switzerland, Germany, and France to the Netherlands, where it forms a massive delta at the port of Rotterdam. It carries more commercial traffic than any other European river, generates power, and is used for industry, agriculture, and sanitation, with almost 50 million people living in its watershed.

The Rhine has served humans well, and this utility has nearly been the death of it. In the early 19th century, as the river's beauty was being revered by poets, writers, artists, and tourists, governments along the Rhine were looking beyond the river's scenic qualities. Even then, the importance of the river to European commerce was so obvious that in 1815 the nations along the Rhine created the Rhine Commission, declaring the river a shared commercial waterway and its banks free-trade zones.

With the exception of several years during the Nazi era, the commission has met annually since 1831. It has survived wars, revolutions, state unifications, and changes in national boundaries. Establishment of the Rhine Commission marked what Cioc calls "the first step in the long march of diplomacy that culminated in the Common Market and the European Union." But it also set the stage for the near destruction of the river's viability to sustain both life and commerce.

Cioc meticulously chronicles how many of the riparian engineering projects done under the aegis of the Rhine Commission, each with a goal of "improving" the river for human use, often achieved the opposite effect. These projects, done in the name of better navigation and less flooding, produced more flooding, along with a loss of biodiversity and overdevelopment along the river and its floodplain.

There was no single engineering project to blame, but rather the incremental legacy of many projects over many years. "You think if you build this dam, or block that tributary, it's not going to make a difference," Cioc says. "But then you do another and another and another, and suddenly, the river's viability is gone. And it goes fast."

First came a flood-control project on the Upper Rhine, a portion of the river extending north from the Swiss-German border into southern Germany. Beginning in 1817 and continuing for nearly 60 years, this stretch of river channel was straightened—its meandering loops, crisscrossing multiple channels, and oxbows eliminated. The plan also had the desired effect of improving navigation and increasing arable land in the river basin.

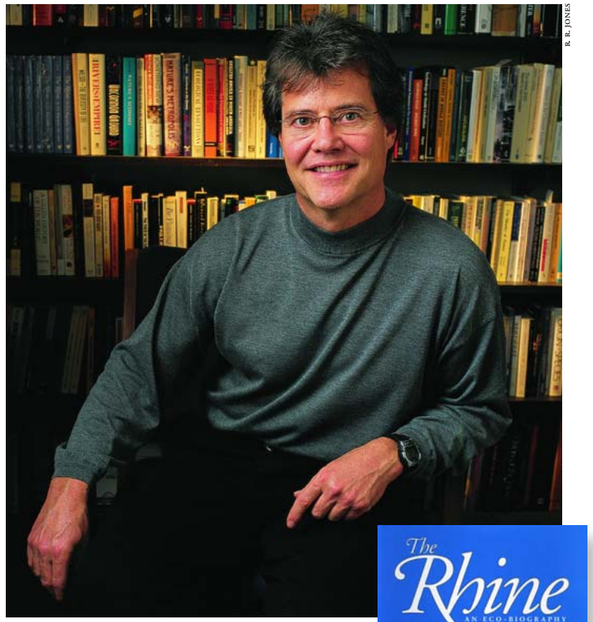
Subsequent engineering projects attempted to further improve navigation in the Middle and Lower Rhine, which extends through Germany to the Dutch border. Reefs were blasted out, banks were reshaped by dredging, and the new shore was reinforced with cement. The Dutch dredged, built dams, and cut channels, consolidating water from the delta's lattice of creeks so effectively that Rotterdam became the world's largest harbor.

Meanwhile, the industrial revolution was moving into high gear. Coal mining and iron and steel manufacturing changed much of the watershed land from agricultural to industrial use, polluting the river's water and watershed. River cities had been using the Rhine for sewage disposal for centuries, but increased populations meant increased sewage. Chemical plants and chemical-based industries started competing for space on the riverbanks, using the Rhine water for manufacturing and dumping.

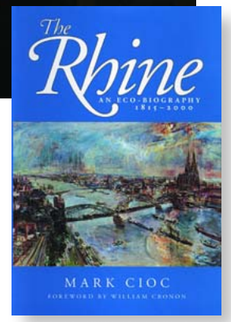
Hydroelectric dam construction began in the late 19th century, destroying riparian habitats and trapping polluted water. Oil refineries and nuclear power plants joined the detrimental lineup in the 20th century, raising the water temperature by sending heated wastewater back into the Rhine. When an organized effort to repair the river finally began in 1950, the impetus was not the environmental movement, nor did it happen because someone noticed that the salmon had vanished. It happened because the Rhine governments realized that people, property, and the economy along the river were endangered.

Pollution of industrial and urban water supplies in the delta had become so bad it could no longer be ignored, and the Dutch government took the lead in creating the Rhine Protection Commission. Focused on assessing water quality in the river, this commission became the first in a series of government organizations established during the ongoing restoration efforts.

When multiple "100-year" floods occurred in quick succession, the governments also began an effort to restore some of the floodplains destroyed a hundred years earlier. "The notion that you can domesticate a river and it's over and done with is absurd," says Cioc.



Author Mark Cioc: *"The notion that you can domesticate a river and it's over and done with is absurd."*



Cleanup efforts were accelerated by the catastrophic 1986 fire in a storage facility at the Swiss Sandoz agrochemical plant. Since the building lacked a sprinkler system, firefighters doused the blaze with firehoses, sending 10 to 30 metric tons of raw chemicals into the Rhine. As the world watched, the chemicals washed down the river to the North Sea, wiping out virtually all fish and plant life along the way. The Sandoz accident raised international awareness of environmental problems in the Rhine, and coincided with the Rhine nations' cleanup discussions and the rise in popularity of the German Green Party, a political organization which has as its core platform the protection of the environment. "All these factors combined to put more and more focus on preserving the biology of the river," says Cioc.

Today, the Rhine nations have established mechanisms to monitor, protect, and rehabilitate the river, and the Rhine is slowly recovering its water quality, a measure of its biodiversity, and some floodplains. The Rhine nations have even initiated projects designed to bring salmon back to the river. Spawning grounds and nursing areas are being restored. To circumvent dams and weirs blocking migration routes, fish ladders and passages are being built. But previous destruction of salmon habitat was so thorough that the current restoration has only laid the groundwork for a possible, and very gradual, return of the great fish to the Rhine.

Cioc, who calls salmon the "embodiment of the river's soul and the foodstuff of myth and legend," predicts that one day there will even be a self-sustaining salmon population, although only at a small fraction of the spectacular runs of the past.

"I thought when I was doing research for this book that it would be a story of decline and rebirth, but it's really not," says Cioc. "After a river has been manipulated to this extent, there's a permanence to the damage."

Cioc also sees one other obstacle to the river's full restoration: The Rhine's biology will remain secondary to the Rhine's economy. "The river will continue to improve," says Cioc, "but only as long as the improvements serve human populations who live and work along the Rhine." —Ann M. Gibb

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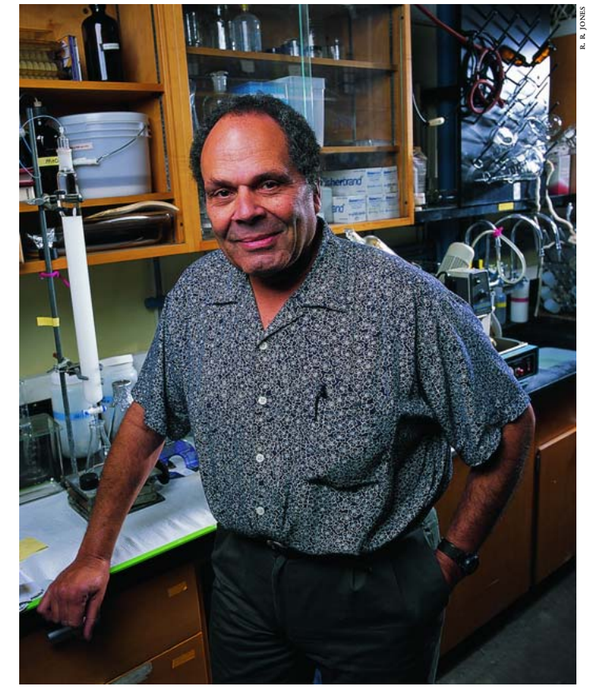
Adventures in Organic Chemistry

In some ways, animal life doesn't get much simpler than a sponge, a creature with no mouth, gut, muscles, nerve cells, or sensory organs. A chopped up sponge can regrow from as little as a single cell. Surprising complexities, however, lie beneath the apparent simplicity of sponges. Organic chemists, for example, have been astonished by the unusual structures of some of the chemicals found in these "simple" organisms.

Sponges have been around for more than 500 million years, and genetic evidence suggests spongelike organisms were the ancestors of all animal life. Today, they are found throughout the world's oceans—and even in fresh water—and come in an amazing variety of shapes and colors. Mostly, they sit in one place and feed on bacteria and other plankton by filtering enormous volumes of water through an intricate system of canals and chambers.

To hold their own in a sea teeming with predators and competitors, sponges have evolved a diverse array of chemical defenses. As stationary, soft-bodied creatures, their primary defensive strategy is to make themselves unpalatable or downright toxic. The potent chemicals that sponges use for protection have attracted intense interest from medical researchers and pharmaceutical companies seeking to develop new drugs.



R. R. JONES

Chemistry professor Phil Crews and his research team are exploring the pharmacological potential of compounds derived from marine sponges. Facing page: Crews and his research team at work in the South Pacific.

Phillip Crews, a professor of chemistry at UCSC since 1970, is among the pioneers in the field of sponge chemistry. His Marine Natural Products Laboratory now holds an unparalleled collection of nearly 800 pure compounds—complex chemicals isolated from sponges and other marine organisms—as well as thousands of extracts containing mixtures of chemicals the lab has yet to separate and analyze.

In the 1980s, Crews published some of the first papers on the chemistry of sponges. Now, his research lab involves some 20 graduate students, postdoctoral researchers, undergraduates, and technical staff. Several major grants from the National Institutes of Health support the group's ongoing projects and collaborations.

Their research takes Crews and other members of his laboratory on annual expeditions to remote tropical islands, where they explore the waters around coral reefs and other habitats, collecting sponges for chemical analysis.

"It's neat to be a chemist and get to do scuba diving as part of the job," says graduate student Chris Wegerski. "I was afraid of the ocean until I joined the lab, and now I love to dive."

The researchers are careful to avoid overharvesting any particular sponge, and always leave behind part of each specimen so the sponge can regrow, says Karen Tenney, the lab's research coordinator. "We know these are fragile ecosystems, so the collecting is carefully targeted," she says.

Crews still remembers the day in 1974 when he decided to explore the chemistry of sponges. Thumbing through a book entitled *Poisonous and Venomous Marine Animals of the World,* he read that extracts from sponges had shown antibiotic and antiparasitic properties. Turning to the section on the chemistry of sponges, he saw just one word: "Unknown."

"That was the moment when it struck me that this is what I should do," Crews says.

Crews set about methodically acquiring the knowledge, skills, and equipment he would need to pursue this new path. Through the campus's recreation department, he learned scuba diving so he could collect specimens. Later, he took sailing lessons so he could rent boats on his expeditions to the tropics.

continued on page 20

"There was a 10-year period when we learned how to organize ourselves to explore these very remote areas," Crews says.

As an organic chemist with little background in biology or ocean sciences, he had to spend a lot of time learning about the natural history of sponges. Now, when Crews goes on an expedition, he knows what to look for.

"We have a sense of what kinds of sponges have been important in terms of chemical leads, based on our experience in previous years," he says. "We also know which ones have already been well studied, and we try to avoid those."

Over the years, Crews has focused much of his collecting effort around the South Pacific islands of Fiji, the Solomon Islands, and Papua New Guinea. The variety of coral reef habitats in this region has given rise to great biological and chemical diversity in the sponges. Crews has found that even within the same species of sponge, the chemistry can differ from one locale to another.

The samples Crews and his colleagues collect go through an extensive extraction procedure designed to separate interesting chemicals from the tissues of the sponge. It starts on the boat with a good soaking in a 50 percent alcohol solution (100 proof vodka will do in a pinch), and concludes in the laboratory with a series of separation procedures, yielding a half-dozen crude liquid extracts from each specimen. Then the really interesting work begins.

Each extract contains hundreds of chemicals, one of which may yield a new treatment for a disease like cancer or arthritis. The challenge is to find the potentially useful compounds. Biological assays or tests can be used to identify extracts with valuable properties. The National Cancer Institute, for example, has a standard battery of assays for antitumor activity. If an extract shows activity in one of these assays—stopping the growth of breast cancer cells, for example—the Crews lab can further refine it and try to isolate and characterize a specific compound that can serve as the basis for the development of a new drug.

Each extract contains hundreds of chemicals, one of which may yield a new treatment for a disease like cancer or arthritis. The challenge is to find the potentially useful compounds.

Crews's lab also searches the extracts for compounds that are interesting in their own right, either because of a unique chemical structure or a similarity to a compound already known to have useful properties. This involves the use of sophisticated equipment and techniques for separating and analyzing the individual compounds in an extract.

"With instruments like the mass spectrometer, we're able to get a sense early on of any novel chemistry in the organism," Crews says. "That's buttressed by the biological assays performed by our various collaborators and partners."

Determining the exact chemical structure of a new compound can be a lengthy and complicated process. For Crews, however, it is the most interesting part of his research. Although much of his work has a very practical orientation, Crews remains at heart a theoretical organic chemist. What really gets him excited is the discovery of a new compound with a unique chemical structure.

"Chemists can do combinatorial chemistry to create novel synthetic structures, but they're never going to envision what nature can do. I look at nature as the ultimate chemist," he says.

The most promising drug lead to come out of the program so far is a group of compounds called bengamides, which Crews first isolated from sponges collected in the Benga Lagoon in the Fiji Islands. The bengamides have shown potent antitumor activity, and the pharmaceutical company Novartis has been investigating them for clinical use. A bengamide-derived drug is currently in clinical trials to test its safety and effectiveness as a treatment for breast cancer.

Sometimes the lab discovers compounds that are not entirely new but are interesting variants within a class of known compounds. The value of such discoveries often lies in the added complexity of the chemical structure or slight differences in biological activity, Crews says.

Wegerski, for example, was screening a library of extracts from sponges collected in Papua New Guinea when he found some new types of manzamines, compounds previously shown to have antimalarial properties.

"Papua New Guinea has a bad malaria problem, so it would be nice if something we discovered there could be used to help them out," he says.

Drug leads are not the only useful products to come out of Crews's library of chemical compounds and extracts. Some of the compounds his lab has isolated have proved to be very useful tools for cell biologists because they bind to and inhibit specific cellular proteins. These inhibitors can be used as molecular probes to tease apart complex biological processes. The Crews lab doles out precious samples of these compounds to other scientists around the world.

Crews is constantly moving forward into fresh territory—adopting new technologies, establishing new collaborations, and pursuing new areas of investigation. A few years ago, he began exploring the chemistry of marine fungi. "The microorganisms—both fungi and bacteria—may be the next place where we're going to see a lot of new chemistry," he says.

Crews decided to study the microorganisms from sponges in part because he thought they might explain why completely different sponges sometimes contain identical chemical compounds. Perhaps, he thought, the compound is produced by a microorganism associated with both sponges. So far, he hasn't found a case like that, but he has found a lot of interesting chemistry produced by the fungi associated with sponges.

Four Ph.D. theses have now come out of his lab's research on the chemistry of microorganisms associated with sponges. Some of the compounds derived from sponge fungi have shown anticancer activity in the National Cancer Institute's panel of screening assays and are being evaluated further.

The vast library of extracts and pure compounds Crews has amassed from 20 years of expeditions is becoming increasingly valuable as new technologies emerge for analyzing the extracts and finding useful compounds.

Crews works with an impressive array of collaborators to make the most of this remarkable collection. Novartis's Institute for Biomedical Research and the Josephine Ford Cancer Center are both involved in ongoing partnerships with Crews, screening his library to find drug leads. And Crews is working with a growing number of colleagues at UCSC to find new ways of exploring his collection.

"The way he has run his operation is a model for all natural products researchers," says Theodore Holman, an associate professor of chemistry and biochemistry at UCSC and one of Crews's collaborators. "He loves collaborations where his compounds are used in other people's assays, and he is truly a fun person to work with. His personality really helps the collaborative endeavor work and makes the repository even more valuable."

Holman studies enzymes called lipoxygenases that have been implicated in a broad range of human diseases, including cancer and heart disease. He found 20 different lipoxygenase inhibitors by screening just part of Crews's collection of pure compounds and crude extracts.

"To find 20 novel inhibitors so quickly from this one repository is phenomenal, and that's just with my one little assay," Holman says. "When you look at the quantity of extracts he has and the biodiversity that it comes from, the potential is amazing."

R. R. JONES

Phil Crews and his crew: *(l–r) Itchung Cheung, Paul Ralifo, Akiko Amagata, Phil Crews, Jocelyn Flanary, Chris Wegerski, Karen Tenney, Nate Segraves, Claudia Meents, and Robert Cichewicz.* NOT PICTURED: *Taro Amagata, Laura Clifford, Dan Kuhn, Tyler Johnson, Jeff Gautschi, Rachel Sonnenschein, and Phil Wenzel.*

New "high-throughput" technologies may speed up the pace of discovery. For example, assistant professor of chemistry and biochemistry Scott Lokey is setting up a robotic system that can screen 10,000 compounds in one day in an assay for selective destruction of cancer cells. New instruments also make it possible to purify large numbers of compounds in a short time.

In the past, standard screening procedures have involved running a relatively small set of crude extracts through an assay to see, for example, if an extract kills cancer cells. If activity is detected in one of the extracts, it is then further purified. The partially purified fractions are run through the assay again, and the process is repeated until, with a bit of luck, it yields a pure, active compound.

Recently, the Crews lab took some of their crude extracts to the laboratory of molecular pharmacologist Kip Guy at UC San Francisco, where they used a sophisticated new instrument to quickly generate hundreds of purified fractions from each extract. Each fraction contains a pure compound or perhaps a mixture of two compounds. Next, they will screen these fractions using Lokey's robotic assay system.

"Our technology continues to evolve," Crews says. "We just bought a high-pressure extractor that can do in less than an hour what used to take us a week. And if you were to come back to our lab in a few months, you would see new pieces of equipment."

Even with the latest technology, the path from detecting biological activity in an extract to developing a useful drug is long and tortuous, and there are many pitfalls along the way. One of the drawbacks of sponges as a source of pharmaceuticals is the limited availability of the raw materials. Many of the most interesting compounds make up less than 1 percent of the sponge by weight. It would be impractical, not to mention environmentally irresponsible, to harvest large quantities of wild sponges for drug production.

Synthesizing the compounds in the laboratory is one alternative. Although that can be quite challenging, chemists may not need to synthesize the entire compound as it occurs in nature, according to Holman. Having found 20 different lipoxygenase inhibitors, he is now trying to identify the common feature that accounts for their potency.

"If we can determine what that core feature is, then maybe we can synthesize a compound with that basic scaffold and develop it into a drug. So the natural product can help us design the drug," Holman says.

Crews calls this "inspirational chemistry."

Another approach is to identify the genes involved in making the compound in the sponge, then try to transfer the genes into a microorganism that can be cultured on an industrial scale. Crews is pursuing this approach in collaboration with David Sherman, a microbiologist at the University of Minnesota. As an undergraduate at UCSC in the 1970s, Sherman did his senior-thesis research in Crews's lab.

"We're trying to understand the machinery that nature uses to put these molecules together," Crews says. "So this has sent us in yet another direction."

Despite the diverse ways in which his research program continues to evolve, Crews is never likely to stray far from his first love, organic chemistry. In fact, he is currently deeply engaged in writing a revised second edition of his textbook, *Organic Structure Analysis.*

By staying at the forefront of organic chemistry, while developing a broad range of interdisciplinary collaborations, Crews has managed to develop a program that effectively combines basic and applied research. Biomedical researchers are already exploiting the novel chemistry Crews has found in sponges and other obscure organisms, but they have only begun to tap into the full potential of his lab's repository.

"There are millions of compounds in his repository," Holman says. "We have just begun to scratch the surface in terms of the potential benefit to mankind."

—Tim Stephens

Alumni News

Alumni Association Councilors, 2002–03

Cowell
Adilah Barnes '72, *Vice President for External Affairs*
Gregory Canillas '90
Karen Rhodes '77
Allison Tom '93

Stevenson
Sandor Nagyszalanczy '77, *Vice President for Administration*
Joan Scott '69

Crown
Michael Brown '74
LizAnne Jensen '78, *Vice President for Finance*
Linda Wilshusen '72, *Past President*

Merrill
Ken Doctor '71, *Executive Vice President*
Patrick R. Ford '93
Dominador Siababa '75, *Vice President for Internal Affairs*

Porter
John Gutierrez '73
Rob Sawyer '72
Nicki Silva '73

Kresge
Richard C. Hall '92
Yvette Keller '96
Sharif Traylor '85

Oakes
Mark Adams '84
Eric D. Thomas '84, *President*
Filomena Trindade '85
Pat Walker '84

College Eight
Susan Brutschy '80
Aaron Cole '91

Ex Officio
George Blumenthal, *Chair, Academic Senate*
Carolyn Christopherson, *Executive Director*
M.R.C. Greenwood, *Chancellor*
Matt Jones, *Chair, Student Union Assembly*
Emily Moberg Robinson, *President, Graduate Student Association*

Banana Slug Spring Fair 2003 on April 12

PHOTOS: SIMMEL THALER

Banana Slug Spring Fair 2002 *brought more than 1,500 alumni to campus. Among them were 160 members of the Class of '72 who reconnected at their 30-year reunion, Among those attending were* (left, l–r) *Linton Von Beroldingen (Stevenson '70) and Cowell '72 grads Cecilia Von Beroldingen, Anne Scott, Steve Miller, and Ramah Commanday. The Class of '92* (right) *celebrated its 10-year reunion with a gathering at Porter Library. Organizers of the event, Shonelle Blake (Oakes, in red jacket) and Richard C. Hall (Kresge, far right), a member of the Alumni Council, pose with friends at the event.*

Alumni are invited to Banana Slug Spring Fair campus open house on Saturday, April 12. Activities include alumni reunions, lectures, performances, panel discussions, and tours. Highlights are listed below. For information or to RSVP, contact the Alumni Association at (800) 933-SLUG or go to the web site at **alumni.ucsc.edu.**

Alumni events:

▶ **All-Alumni Reunion Luncheon.** Reconnect with old friends at BSSF's largest event. Classes of '73, '78, '83, '88, '93, and '98 will receive special recognition. Alumni are seated together by class year. Alumni can invite a favorite faculty member to join them for lunch. Check the web site for details.

▶ **Provost's Reception.** The colleges will hold late-afternoon receptions for alumni, faculty, and staff, generally at the provost's homes. Kresge's will honor Alumni Association award winner and provost Conn Hallinan (see story, p. 5). College Eight's reception will honor associate professor of sociology Andrew Szasz, provost since 1998, who leaves the post in June. At Oakes, associate professor of history Pedro Castillo will welcome alumni in his new role as provost.

▶ **Thirty-Year Reunion of the Class of '73.** Celebrate at Cowell Dining Hall with a reception, dinner, and "roast" of the year 1973. Reconnect with old friends and faculty members, and meet Chancellor Greenwood. Alumni are encouraged to scour old photo albums for period photographs and submit them (scanned, with accompanying captions welcome) for a multimedia reunion presentation. Volunteers are also needed to "spark the roast." Send digital photos and favorite song titles to the Alumni Association at *alumni@ucsc.edu.*

▶ **Thirty-Year Anniversary of College Eight.** All College Eight graduates and friends are invited to a post-luncheon alumni/faculty discussion about the college's past, present, and future. Special recognition will go to the College Eight Class of '93, the first group to live at the college residence halls, which opened in 1989.

▶ **Fifteen-Year Reunion of the Class of '88.** The class that gave UCSC the banana slug mascot reconnects at a post-luncheon celebration. Interested alumni can contact reunion chair Pete Blackshaw at *pblackshaw@PlanetFeedback.com.*

▶ **The Page and Eloise Smith Scholastic Society** will hold an afternoon reception bringing together alumni, students, and faculty. The society offers scholarships, mentoring, and outreach to support the educational aspirations of foster youth, wards of the court, and orphans, giving particular attention to those enrolled at UCSC.

▶ **The BSSF Distinguished Faculty Lecture** will be presented by Adrienne Zihlman, professor of anthropology, an eminent teacher and scholar of evolutionary theory, primate and human evolution, primate behavior and anatomy, and the role of women in hominid evolution.

Scholarship winner defies expectations

When Sandra Salcedo takes a seat in her 8 a.m. class, the slight, brown-eyed 22-year-old is ready for the lecture.

Latecomers straggle into class, regretting another late night hanging out with friends.

Salcedo doesn't straggle, and if she's tired, this senior sociology major has a different reason for it.

Her typical morning routine involves waking up before dawn; feeding and dressing her two-year-old daughter; dropping her at the babysitter's; commuting to UCSC from Watsonville; finding parking in a distant lot; and making it to class with time to spare.

And that's the least of her accomplishments.

Salcedo's attendance at UCSC defies expectations. Her parents immigrated from Mexico with dreams of a better future, but their lack of education and limited English kept them working in fields and canneries. Salcedo's childhood was marked by poverty. She married and became pregnant before she was 20.

But these factors, which might have held her back, have instead become motivations for success.

"My parents always encouraged education because they didn't want us kids to have the kind of life they were living. They'd come home aching from work and tell us, 'Study, so [later in life] you won't have to be so tired like we are.' I am determined to finish school to make my parents, husband, and daughter proud of me," Salcedo says. Her goal is to become a social worker and work with children who've experienced domestic abuse.

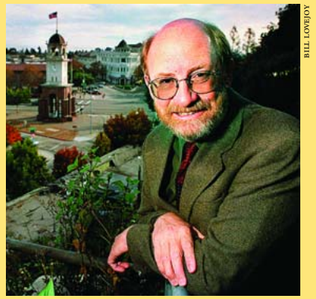
Salcedo's commitment to education was recognized this year when she was among 15 students to win a $2,500 Alumni Association Scholarship Fund (AASF) award. Thirteen additional undergraduates are receiving $1,500 this year while in their second or subsequent year as Alumni Association Scholars.

Donations to the AASF are welcome. For more information, call Jennifer Wood, UCSC's director of development for the annual fund and colleges, toll free at (800) 933-SLUG.

UCSC PHOTO SERVICES

Recipients of 2002–03 awards *from the Alumni Association Scholarship Fund are (bottom row, l–r) Aurotaranti Maiolini, Marylee Franks, Sandra Salcedo, Katrina Traylor, Jacqueline Vickers, Audra Walton; (top row, l–r) Clint Thorne, Julia Randall, Rebecca Hartman, and Sonia Villa. Not shown are Raziel Davison, Arwen Edsall, Quressa Robinson, Mark Sayre, and Shawna Tokars.*

John Laird (Stevenson '72) **won election to the California Assembly from the 27th District this past November. Laird will represent Santa Cruz, the coastal Monterey Peninsula, Big Sur, and Morgan Hill. Laird had served as mayor and city council member in the city of Santa Cruz and most recently was on the Board of Trustees of Cabrillo College.**



BILL LOVEJOY

Online Community reunites old friends

The strangest thing is how our memories are so vivid of our days at UC, but when we consider getting in touch with old friends, we are afraid they won't remember us," writes Kristine Amodeo (Oakes '94).

We shouldn't worry.

Amodeo, owner of Sierra Art Studio near Sonora, California, knows from experience. She's one of countless alumni who have reconnected with old friends since the Alumni Association launched its Online Community. "It was a wonderful surprise getting her e-mail out of the blue," she says about hearing from a Family Student Housing pal. "Since then, we've been trading photos of our teenage boys. After eight years, they've all grown so tall!"

© 2001 UCSC

Chicago-based marketing and communications executive Rob Moore (Stevenson '70) had lost track of his old friend Buzz, who'd moved to Thailand in the mid-'80s. "He'd completely disappeared," Moore says.

After reading about the Online Community, Moore went to the site's alumni directory feature, "typed in his name, and bam! There he was, with an address in the San Francisco Bay Area. No e-mail, no phone, but I wrote to him immediately." Buzz quickly responded. Finding his old friend "was a pure emotional hit," he says.

Freelance illustrator Michael Wertz (Porter '90) used the Online Community and "found lots of current information and—lo and behold—e-mail addresses. I hooked up with Cheryl. We hadn't seen each other in about five or six years. She's linked with some of my fondest UCSC memories. We go-go danced on the huge tree stump in the Porter quad and made interesting 'food' concoctions out of the all-you-can-eat at Saga. It was great to see her again."

The Online Community offers password-protected contact information for 50,000 UCSC graduates, more than 5,500 of whom have directly personalized and updated their records. Grads can customize home, business, and/or e-mail contact information they'd like to share. They can even post a photo of themselves.

The multifaceted Online Community web site offers an alumni directory, resume posting and business-card exchanges, class notes, an Alumni Association events calendar, web pages for regional and affinity groups, mentorship opportunities, and much more—all free to UCSC alumni.

Log on to the Alumni Online Community *(alumni.ucsc.edu)* today and look for old friends. As Wertz puts it, "We're both a bit older now (obviously) and our hair is no longer dyed black, but the connection's still there."

Alumni Notes

Cowell College

'69 Marion "Happy" HOWARD Hoekenga's pen-and-ink sketches are published in *Daughters of History: Centennial Memoirs of the Daughters of the Pioneers* (Berkeley Hills Press, 2002); she is pursuing a second B.A. in studio art at the University of Nevada, Las Vegas. **Mary Beth SAFFO** is a Fellow in the Radcliffe Institute of Advanced Study at Harvard University for the 2002–03 academic year.

'70 After five years in Manhattan, **Sandra KATZMAN** is a freelance writer, whose recent clients include the United Nations and Mitsubishi Research Institute. **Davis STRAUB** does an online e-zine that covers hang gliding around the world at *www.davisstraub.com/OZ.*

'71 Peter MYERS is a full-time screenwriter in Los Angeles, as well as a founding partner and senior vice president of creative affairs for BlueSky Pictures; friends can reach him at *pdmyers@pacbell.net.* **Robert THOMAS**'s book of poems, *Door to Door* (Fordham University Press, 2002), was chosen by Yusef Komunyakaa as the winner of the 2001 Poets Out Loud Prize.

'72 Florence NELSON is executive director of the New Jersey Professional Development Center for Early Care and Education.

'73 Janice HANSEL is a new public school teacher who came to public education in midlife with experience in business, not-for-profit management, and college teaching.

'76 Peter HANKOFF stumbled into producing TV documentaries and has won a Gabriel Award for a show about Empire State Building ironworkers for the History Channel. **Kathryn REASONER** has returned from a yearlong fellowship in Japan to her work as director of Headlands Center for the Arts in the Golden Gate National Recreation Area.

'77 Louise COHEN is chief of staff for the New York City Department of Health; she and her husband, David Lewis, have two boys, ages 12 and 15; David is the brother of alumni **Stephen LEWIS** (Porter '75) and his wife, **Anne LEWIS** (Porter '89). **Richard FORRESTER** is a software engineer/manager; he and his wife and four children live in the San Francisco Bay Area. **Virginia (Lee) WULSIN Roberts** is back at UCSC working as a graduate assistant for the Psychology Department; her son, John Jacobs, is a senior at UCSC, working on his computer engineering degree; and her brother, **Bill WULSIN** (Cowell '78) is a naturopathic doctor in Seattle, married with two children.

'78 Mary FITZPATRICK and her husband, **David VAN PELT** (Cowell '76), write that their son, George Van Pelt, is attending Cowell as a freshman.

'79 Rick KERN is serving as UC Education Abroad Study Center director in Lyon and Grenoble, France; UCSC alums passing through Lyon or Grenoble may contact him at *rkern@univ-lyon2.fr.* **Jon Warren LENTZ** lives in La Costa in north county San Diego and makes his living as a freelance artist and author; his fifth book, *Flash: The Future*, is about the use of the Flash authoring tool to develop content for handheld devices. After working for eight years at the STOP AIDS Project in San Francisco, **Daniel WOHLFEILER** is now at the STD Control Branch in the California Department of Health Services; he's also president of the board of the Jewish Film Festival and living in Berkeley.

'80 After 20 years in the suit-and-tie world, **Gregory RUTTER** decided in March of 2001 to start a new career as a metal sculptor; his web site is *www.angelfire.com/art2/metal.* **Deborah ROARICK Woods** loves living in West Virginia, where she is director of the Career and Academic Student Enhancement Center at Salem International University; she is also pursuing a master's degree at West Virginia University.

'83 Carol SUNDBORG Curtiss and her husband, Michael, have a baby boy, born in March 2002.

'86 Darrick YUN's novel, *The Chronicles of Dat Seung, the Young Monk*, is available at *www.booksurge.com.*

'88 Peter BLACKSHAW is happily married to Erika Brown and living in Cincinnati, where he founded an Internet company (PlanetFeedback) after a five-year marketing stint at Procter & Gamble. **Richard DOMINGUEZ,** who worked at the World Trade Center and survived, and his wife, **Gabriella DAYA-Dominguez** (Cowell '88), are happy to be alive and to celebrate the birth of their third son, Trevor Charles.

'89 Matt AALFS received a master's of architecture degree from the University of Washington in 1999 and taught in Rome in 2001 as part of a UW program; he currently practices architecture in Seattle, where he lives with his wife, Nola. **Sara BRECKENRIDGE Elder** lives in Fort Collins, Colo., with her husband and two sons, ages 5 and 7; she is a full-time mom and a part-time freelance author; friends may contact her at *smekelder@msn.com.* **Matthew Liao-TROTH** and his wife have relocated to Bellingham, Wash., and have a five-month-old daughter, Avery.

'92 Kate FARNADY is the executive producer at eBay; she lives in Berkeley with her husband, Phil Stevens, and their dog; they are expecting their first baby in 2003. **Nysa KLINE** and her husband, **Mark FLAMING** (Porter '93), had their first child, Paige, in March 2002; they live and work in Marin County. Nysa is a project manager in the wine industry, and Mark works at Sutter Instrument Company. **Jane PARKS-McKAY** has been a correspondent reporter for the *Santa Cruz Sentinel* for over two years; in 2002, she was nominated for a Pulitzer Prize for feature writing; she is also a contributing writer for *A Cup of Comfort Cookbook* (Adams Media, 2002).

'93 Kara LIEBRAND is living in Silicon Valley, working in the tech/Internet industry, and studying for her master's in counseling psychology at Santa Clara University; she also volunteers as a dog socializer at the Santa Clara Valley Humane Society.

'96 Marcus VIGIL is currently an "unemployed hopeless bachelor" in Portland, Ore.

Stevenson College

'68 Eric MOSKOWITZ has been teaching math at a high school in New Zealand for nine years and raising two children.

'70 Ralph MITCHELL, an attorney with Lapp, Libra, Thomson, Stoebner & Pusch in Minneapolis, was recently named one of Minnesota's best lawyers in a guide put out by three Minnesota law and business magazines.

'71 Gary HOLZHAUSEN is still running Applied Geomechanics in Santa Cruz and is active in National Rifle Association events and fundraising.

'73 Carol HARRIS is back in school to get her court-reporting license. **Karen WEICHARDT-Nyere** has a small dance company that does sacred dance and environmental pieces; she also volunteers as a naturalist instructor at a wetland wildlife sanctuary in Alexandria, Va.

'74 Steven BROWN won a Distinguished Professorship for Teaching award for 2002 at Youngstown State University (Ohio), where he is an associate professor of English.

'76 Michael ROSENTHAL has been writing and producing stories for the television show *Bay Area Backroads* (KRON-Channel 4, San Francisco) since 1993; in 2002 he

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NBC/NORMAN NG

In a Saturday Night Live *skit, rocker Axl Rose (Matt Damon) prepares to indulge in the latest creation by fashion designer Donatella Versace (Maya Rudolph)—her microwavable "Versace Pockets."*

Live from New York, it's...Maya Rudolph!

Maya Rudolph—B.A., Art (photography), Porter College, '95—keeps *SNL* audiences in stitches

As a little girl in the late 1970s, Maya Rudolph begged her parents to stay up late to watch her favorite show, *Saturday Night Live.* "I remember crawling into my parents' bed when they were watching it. I fell in love with Gilda Radner; I just wanted to be her when I grew up," recalls Rudolph. "It was just one of those things where I thought 'I want to do that when I grow up; I want to do that when I grow up'—and the feeling never went away."

Today, the performer who as a 5-year-old wowed her Los Angeles family with impersonations of Roseanne Roseannadanna—one of Gilda Radner's signature characters—is living her childhood dream as a *Saturday Night Live* cast member. Rudolph treats viewers to an eclectic mix of characters—from fictional high schooler Megan to buttoned-down presidential adviser Condoleezza Rice to over-the-top fashion designer Donatella Versace. And though this is her third full season with the show, she's "still kind of shocked" at the way things have turned out.

"This show is a forum that allows me to get out all these things I want to write and perform; for me it's the greatest job in the world," says Rudolph, who joined the cast after being spotted by a *Saturday Night Live* scout while working with the improvisational Groundlings Theater in Los Angeles. "I have all these different characters who need to be brought to life."

Rudolph says most of her characters have a great need to be accepted and loved—"and then there's Donatella. She gets away with murder," Rudolph notes. "We've created a character based on a person, but at this point it's so insane, it doesn't even translate into normalcy anymore."

Not that the designer appears to mind. "I spoke to Donatella recently. She really liked it, which made me really happy, but she also kept giving me pointers, like, 'If you're going to do me, you can't wear fake diamonds,' things like that."

A character much closer to Rudolph is Megan, the gawky co-host of the school-based show, *Wake Up, Wakefield.* "That's really based on my own life, anyway: junior high, unrequited love."

Describing the *Saturday Night Live* creative process as "a complete free-for-all," Rudolph says that all the cast members do considerable writing as well as performing.

NBC/MARY ELLEN MATTHEWS

Rudolph's musical parodies, which she describes as a "guilty pleasure," are especially popular. In one recurring parody, she and cast member Ana Gasteyer portray the singing group Destiny's Child—as Gemini's Twin. "That stuff is so ripe for parody that it's really fun to do. We get to make music videos, and wear the most stupid costumes you've ever seen." Destiny's Child even joined Rudolph and Gasteyer on *Saturday Night Live.* "They were such good sports about wanting to play along with the whole thing."

Rudolph's experience with bands is hardly limited to *Saturday Night Live* parodies. She toured the United States and Europe with The Rentals band after graduating from UCSC.

Music—parody or not—has always come easily to Rudolph, whose mother was singer Minnie Riperton, and whose father, Dick Rudolph, is a songwriter. "My brother and I used to go on the road when we were really little, before we had to be in school, so I was raised around music," she recalls. "Music was always in my house, it's always been in my head, and it's probably the place where I feel the most comfortable if I'm doing a sketch for the show."

One of Riperton's hits, "Lovin' You," was a lullaby for her daughter. Sadly, Riperton developed cancer at an early age, and died when Rudolph was not quite 7 years old, a shock that Rudolph thinks turned her toward comedy. "It probably pushed me to find more lightness. I've always been the kind of person who likes to make people laugh; I like to be on stage, and I've always been a ham," she says. "But I think when something like that, that's so out-of-control, happens in your life—especially when you're a little kid—you definitely try to find a way to make light out of darkness. I think a lot of comedians feel that way. We take things so seriously and it's so depressing half the time, that we just have to laugh."

That lightness has been on display not only on *Saturday Night Live,* but in various film roles. In Rudolph's latest movie, *Duplex,* she plays Drew Barrymore's friend in a movie that also stars Ben Stiller. She enjoyed working with the film's stars and director Danny DeVito, but isn't quite sure what the finished product will look like. "They had me come in and let me do a bunch of different things, so I actually don't know what's going to be in the movie."

Despite living in New York, Rudolph hasn't forgotten about her years at UCSC—"giving my mind a chance to roam"—and likes to work references to the campus and the city into *Saturday Night Live* skits.

"You write what you know, and I know Santa Cruz," she said. "Maybe I'll mention Porter dorms one of these days."

—Louise Gilmore Donahue

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was nominated for an Emmy Award, was named Marin County Big Brother of the Year, and got engaged to Marleen Roggow. In spring 2002, **Lee WANDEL** won a Guggenheim Fellowship to spend the year writing his next book; he has also bought his first house, in Madison, Wis.

'77 Gregor (Puziss) BLACKBURN has worked for over 10 years with FEMA and over five years in the National Flood Insurance Program; in June 2002, he passed the examination to become a certified floodplain manager; he also volunteers at Angel Island State Park and gardens. **Susan BRISON**, an associate professor of philosophy at Dartmouth College, has joined the board of directors of Witness Justice, a national nonprofit organization that serves victims of violent crime. In August 2002, Governor Gray Davis appointed **Kelvin FILER** to a judgeship on the Superior Court of Los Angeles County; Filer had previously served as Compton Superior Court Commissioner. Governor Davis has also appointed **TERI JACKSON** to the San Francisco Superior Court; prior to this appointment, she was an attorney with Orrick, Herrington and Sutcliffe and had served for 13 years as an assistant district attorney in San Francisco.

'79 Adam GORDON's business in Silicon Valley, Gordon Consulting, has taken off now that he is no longer focusing on just high tech; he's been married for almost 12 years, and has two great sons, Ben, 9, and Ian, 5.

'81 Nicholas WALLERSTEIN is an associate professor of English at Black Hills State University, in Spearfish, S.D.; he is editor of *Proceedings of the Ninth Annual Northern Plains Conference on Early British Literature* (2002).

'83 Rocky OFFNER has been appointed vice president of engineering for Dantz Development Corporation, a provider of backup and restore software in Orinda, Calif.

'85 Stephanie DENMARK is a freelance editor and writer, mostly working for *Consumer Reports* special publications; she lives in Seattle with her husband, Adam Simon, a professor of political science at the University of Washington.

'86 Steve MEISTER is a former prosecutor and political adviser and is now a criminal defense attorney in Los Angeles; he and his wife, Allyson, have a daughter, Noa, 3, and a son, Ari, 1. **Richard NUNES** received his M.D. from UC Davis School of Medicine and is now in his last year of a residency in child psychiatry at Yale University.

'91 Winston Mark HOLYAN and family recently bought a home in Rio Rancho, N. Mex.; Winston is a member of the class of 2005 at the University of New Mexico Law School; his wife, Belinda, is a social worker in the Albuquerque area.

'92 Marcia WALL recently purchased a home in the French Quarter of New Orleans.

'96 David LIPPMAN is in a creative writing graduate program at Mills College in Oakland; friends may contact him at *lippman@yahoo.com.*

'97 Joule ADLER will be graduating from UC Irvine College of Medicine in May 2003.

'98 Andrea VAN NOTE King and her husband, Adam King, recently relocated to Beaverton, Ore.; Adam is pursuing a doctorate in physical therapy, and Andrea is looking for work in career counseling; friends may e-mail her at *dre46@hotmail.com.*

'01 Stefano BLOCH is pursuing a master's in urban planning at UCLA and plans to do a concurrent law program at UCLA, as well. **Catherine WORTH** is a freelance writer in New York City; she won the New California Media Award for Best International Coverage for an article she wrote in 2001 for the national bilingual magazine *El Andar.*

Crown College

'70 Cory SMITH earned a Ph.D. in biomathematics from UC San Diego; worked at Caltech/NASA Jet Propulsion Laboratory, Boeing, and Intel; and is now consulting, teaching, and tech writing.

'73 Bill ALLAYAUD is the state legislative director for Sierra Club California in Sacramento. **Arthur NONOMURA** is a Monbusho Scholar, holds master's and doctoral degrees from UC Berkeley, is a Dow Chemical Corporate Fellow, and is currently a Harvard University officer. After 25 years in various marketing positions, **David SCHAEFER** is teaching business full-time at a local community college; he has a daughter in college (UCSD) and another in high school; his wife facilitates focus groups and business meetings. **Antony TERSOL** is living in Pacific Grove, working in solar photovoltaics, and helping start the Monterey Bay Council for Sustainable Communities.

'74 Michael BROWN recently turned 50 and celebrated by hiking Mt. Whitney; he continues to do environmental consulting, is an editor of the *Journal of Industrial Ecology*, and is still able to surf with his three sons.

'78 Wade LESCHYN is the proud father of twin boys, Aleksy Richard and Erek Wade, born in May 2002 in Redwood City, Calif.

'82 Greg SANDERS is chief of staff–elect at Cascade Valley Hospital in Arlington, Wash., and clinic director at SeaMar Community Health Center. **Andrew SIEGEL** and his wife, **Catherine WEBER Siegel**, met at Crown in '79 and were married there; during the past 16 years, they have worked for the U.S. Department of State overseas and in Washington, D.C.; they are currently in Frankfurt, Germany, with their sons, Christopher, 14, and Nathan, 10, on a four-year assignment.

'85 George L. WILLIAMS II was inducted into the Sigma Beta Delta International Honor Society in Business, Management, and Administration by California Lutheran University in May 2002, in recognition of his high scholastic achievements while a student in the M.B.A. program.

'93 David CHACE has worked at a bookstore since 1996; in 2001 his illustrations of UFO occupants from close encounter cases were published in Ronald Story's *Encyclopedia of Extraterrestrial Encounters.* **Tania FERGUSON** has finished medical school and has two years left of a residency in orthopedic surgery at UC San Francisco. **Laura MEIZEL Reeve** and her husband, **Marc REEVE** (Oakes '96), have a two-year-old daughter, Sadie; Laura is a teacher and a musician.

'94 After earning a second bachelor's degree in biology and working in high tech for a few years, **Deborah FLORES** is working now on a joint J.D./M.A. in international relations at the University of San Diego. **West WALKER** is an elementary school teacher in Saratoga, Calif.

'98 Amanda FUSON recently received her M.S. in wildlife and fisheries sciences from Texas A&M University; she is now a research assistant at the University of Alabama, Birmingham, studying renal physiology.

'01 Jennifer DEAN is teaching a combination sixth-seventh-grade class, and she loves her job.

Merrill College

'71 Ric SHAFFRAN has been a lawyer, entertainment executive, teacher, and consultant and is now assistant dean of continuing legal education at USC Law School.

'72 Eric CAIN is a television producer for Oregon Public Broadcasting in Portland; he recently won a regional Emmy for his documentary on Oregon agricultural workers; another project, *Normal for Us: The Miller Twins*, aired nationally on PBS in August 2002.

'73 After finally finishing a Ph.D. in sociology at Berkeley in 2001, **Joseph PALACIOS** moved to Washington, D.C., to take a teaching position in the Sociology Department at Georgetown University; he is also teaching Latin American studies in the School of Foreign Service; old friends can write him at *jmp32@georgetown.edu.*

'77 Marjorie MILLER has been named foreign editor of the *Los Angeles Times*; she had been London bureau chief since 1998; in her new position she will oversee 28 correspondents and 23 foreign bureaus.

'83 Michael LINICK was promoted to lieutenant colonel in the Army; he spent seven months in Kuwait supporting the war on terrorism and has recently moved back to Washington, D.C.

'87 Lisa JEFFERS-Fabro lives in Hawai'i and works part-time as a family literacy coordinator for the Department of Education; she and her husband, Ati, are expecting their second child.

'88 Carolina CARDENAS is the director of access programs at Cal State San Marcos; she is married and has a two-year-old son, Giancarlo.

'90 Lia Scott PRICE lives in Los Angeles and is a writer of dark fiction; she has had two of her thriller novels optioned for films. **Brian ROSSMAN** has returned to the Bay Area from Capitol Hill, where he spent five months working as communications director for a congresswoman from California.

'91 In May 2002, **Timothy GERACI** received his medical degree from Case Western Reserve University School of Medicine in Cleveland; he plans a residency in internal medicine at the University of Southern California. **Tony LEWIS** lives with a Siberian husky in central New York and teaches linguistics at Syracuse University.

'92 Rachel HOWZELL's first novel, *A Quiet Storm*, was published in September 2002 by Simon & Schuster; visit her web site at *www.rachelhowzell.com.* **Dmitria SOKOLOW** is currently teaching ESL in Portland and enjoying the city culture and beautiful outdoors with **Eric WAGER** (Merrill '92), who works for Widmer Brothers Brewery as cellarman, microbiologist, and taste panelist.

'99 Denise LeeAnne HALL received her M.A. in sports fitness management from the University of San Francisco in January 2002 and has recently been appointed head men's water polo coach at San Mateo High School.

'00 Navy Ensign **Noah FLECK** received his commission as a naval officer after completing Officer Candidate School at Naval Aviation Schools Command, Naval Air Station, Pensacola, Fla.

'01 Mickey SUN is pursuing an M.A. in economics at UC Santa Barbara; friends may write him at *msun@econ.ucsb.edu.*

Porter College

'73 Jim HULL recently published a book, titled *Are Humans Obsolete?*; his web site is *www.jimhull.com.*

'74 Kent NAGANO, music director of the Berkeley Symphony Orchestra, Berlin's German Symphony Orchestra, and the Los Angeles Opera, was identified as one of 100 top creative talents in the San Francisco Bay Area in an article in the September 2002 issue of *San Francisco* magazine.

'76 Lucy HEYNEMAN Arnold and **Michael ARNOLD** (Kresge '75) recently celebrated their 20th wedding anniversary; Lucy is doing solo work and singing with the Pacific Mozart Ensemble and exhibiting her artwork; Michael is an economist and involved in local land-use, conservation, and traffic issues; they have two children, ages 14 and 17. **Richard O'BRIEN Jr.** is the owner of a landscape design and management company, Environmental Enhancement, which specializes in creating low-maintenance residential garden sanctuaries.

'77 In August 2002, **Barbara EDELSTEIN** opened two solo sculpture exhibitions in China, at the Guangdong Museum of Art in Guangzhou, and at the Shenzhen Art Institute Museum; she also has a permanent sculpture at the Guangdong Museum of Art. **Thomas POSTER** recently received his U.S. Coast Guard captain's license, and he is still acting. **Yael (Jacklyn) SCHY** has her own consulting business, InterACT Leadership Consulting; she and her husband, David Schwartz, a children's book author, live in Oakland; she can be reached at *yael@pobox.com.*

'78 Nanci FINGERHOOD lives in Los Angeles, works in public relations and fundraising, and is the proud mother of her one-year-old daughter. **Steven PEÑA** has recently opened a law practice focusing on entertainment law in the Los Angeles area.

'80 Lynda WEINTRAUB Bouch is enjoying her 21st year in the music industry; she has been married for 16 years, loves to travel, is still writing poetry, and has renewed her passion for sailing. **T. Louise FREEMAN-TOOLE**'s book, *Standing Up to the Rock*, a memoir about life on Hells Canyon Ranch, was named the 2001 Book of the Year by the Idaho Library Association and also was chosen Book of the Year by the Pacific Northwest Booksellers Association.

'81 After living in the Bay Area for 19 years, **Karla HUEBNER** moved to Washington, D.C., where she earned an M.A. in art history in August 2002 from American University; now she is working on her Ph.D. at the University of Pittsburgh. **Sarah STONE** earned an M.F.A. from the University of Michigan, Ann Arbor, and now teaches writing at UC Berkeley; her novel, *The True Sources of the Nile* (Doubleday, 2002), was a BookSense 76 selection; she and her husband, Ron Nyren, live in the East Bay.

'83 Leslie FREILICH lived in India for eight years learning to make a rare traditional Tibetan textile art; her hand-stitched mosaics of silk were exhibited at the Pacific Asia Museum in Pasadena.

'87 Lisa LENKER has bounced from San Francisco to Los Angeles, getting an M.F.A. (San Francisco State University), Ph.D. (Stanford), and J.D. (UCLA) along the way; she curently practices law in Century City and lives near the beach.

'88 Olman VALVERDE is an attorney in L.A.; friends may contact him at his firm's web site, *www.mhalawyers.com.*

'89 Susan GUION is now living in Eugene, Ore., where she is an assistant professor of linguistics at the University of Oregon; she has two children, Augustus, 3, and Jane Bruce, 1; visit her web site at *darkwing.uoregon.edu/~guion/guion.htm.* **Alberto MORENO**, his wife, Anna, and his son, Matias, have moved to sunny Boca Raton, Fla., where Alberto has taken a job as a financial adviser for UBS Paine Webber.

'90 Gillian HERMAN earned her master's in social work from NYU in May 2002 and has moved back to the Bay Area as associate director of the newest AileyCamp at UC Berkeley, which exposes underprivileged 11- to 14-year-olds to the arts. **Michael WERTZ** and **Andrew COWITT** (Cowell '88) live in Oakland with their new dog, Olive; Michael is a freelance illustrator and performs in an electronic dance band called Svelte, and Andy does HTML for work and music for fun.

'91 Andrew EHRNSTEIN is beginning a career in commercial real estate in Denver; he and his wife, Cynthia, have an 18-month-old daughter, Sabrina, and another on the way; friends may write him at *endeavorstation@earthlink.net.* **Jonathan Likeke SCHEUER** is working for the Kamehameha Schools on programs that help realize multiple returns (educational, conservation, cultural, and economic) from the school's properties on three islands; he and his wife, Cami Kloster, recently celebrated their second wedding anniversary.

'92 David HAYS got married to a wonderful woman in July 2002 and they are expecting their first child at the end of April 2003; pictures are online at *www.elfland.net.*

'93 Niall BRENNAN has moved from New York City to Rio de Janeiro to expand his horizons in life and love.

'95 Christopher ARNOLD has been living in Seattle for five years; he's writing Java applications for Metro One Telecommunications and living with his girlfriend and two cats. **Emily HAOZOUS** will finish her master's in nursing in May 2003 at Yale School of Nursing and will go on to pursue a doctoral degree in nursing also at Yale, specializing in oncology;

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she married Alexander Evans in March 2002, and **Lara GREENE** (Porter '95) was a bridesmaid.
Amanda HOEHLER Rappaport received her M.D. degree in June 2002 from UC Irvine.
'96 Sarah TEED is a ceramic artist and children's teacher at Hui No'eau Visual Arts Center on Maui; her goal is to promote world peace through the arts.
'97 Lisa HILLSTROM works in the Presidio of San Francisco and bumps into fellow Slugs every now and then; she bought a home last year and lives in Marin County.
'98 James MOCKOSKI was recently hired at American Zoetrope in San Francisco as its film archivist.
Yasmeen THOMASON was in the Peace Corps for over two years, serving in Mauritania, West Africa, where she worked on community health projects; she is currently living in Oakland.
'99 Charles PADOW has taken a job as a communications associate with the California Wellness Foundation, an independent, private foundation that makes grants for health promotion, wellness education, and disease prevention.
'00 Kyla SANKEY is at George Washington University Graduate School of Education and Human Development working on a master's in secondary education and a teaching credential in K–12 art.
'01 Crystal COMBS is serving with AmeriCorps*VISTA in Boston, where she is volunteering with ReadBoston, the city's early literacy program.

Kresge College

'73 Gary NOVACK lives in Marin and is a frequent visitor to the UCSC campus in his role as UCSC Foundation Board member or to go mountain biking; he continues as a consultant in pharmaceutical development, and he filed a New Drug Application with the FDA for a new glaucoma drug in fall 2002.
'75 Bobbi HOOVER was given the Crystal Bowl Award at the 33rd annual volunteer recognition luncheon of the Junior League of San Jose for her bereavement volunteer work for Hospice of the Valley. After 20 years of practicing real estate law with McDonough Holland & Allen in Sacramento, **Sharon ROSEME** is taking a year off to travel, play, and make the world a better place.
'81 After living in Japan, Denver, and New Orleans, **Allison CRANE Garcia** has come home to Santa Cruz and is working at the UCSC Alumni Association.
'82 Panda KROLL and **Kevin VOLKAN** (Kresge '81) have a son, Maxwell Tiberius Volkan (MTV), born in May 2002, and they have relocated from Boston to the Los Angeles area, where Kevin has accepted a position as professor of psychology at California State University's newest campus, Cal State Channel Islands.
'89 Andrea BREUNER graduated from the Physician Assistant Program at the University of Washington Medical School in summer 2002; she finished her training in a clinic in Antigua, Guatemala. **Lael HAZAN** and her husband live in Florida and run a cooking school outside of Verona, Italy (*www.giulianohazan.com/school*): they are in the process of launching A & H Selections, a company that will bring Italian food merchandise to the public.
'91 Lani POTTS has been promoted to house manager of Landmark's Lumiere Theatre in San Francisco; previously she was house manager of the Park and the Guild Theatres in Menlo Park.
'92 Sheryl MARTINELLI is teaching English at North Salinas High School, her alma mater.
'93 Kimberly SWABACK is a student in the Working Professionals' Program in the UC Davis Graduate School of Management.
'94 Sarah YOUSSEFI married Carlos Estrada in June 2002 in Fiji; she graduated from Tulane University Medical School in New Orleans and is completing a pathology residency in Phoenix.
'95 Shelley BATES graduated in January 2002 with an M.A. in writing popular fiction from Seton Hill University in Pennsylvania; her master's thesis, a romantic comedy, was accepted for publication and will be released in June 2003 as part of the Temptation line from Harlequin Books, under the pseudonym Shannon Hollis. **Sarah RUBENSTEIN-Gillis** is living in Ithaca, N.Y., with her husband, Eric, whom she met when she picked him up hitchhiking at the Porter bus stop in 1994; she is a social worker and has recently begun a job teaching social work and applied sociology at Ithaca College.
'96 Yvette KELLER and Mark Bessey are planning to marry in May 2003 in Fremont, Calif., and they recently purchased a home in San Jose; former classmates are encouraged to write at *yvette_keller@yahoo.com.* **Genevieve MUNSEY** is the editor of *Nosh*, a new veggie/environmental magazine out of the Bay Area run by all volunteers; to contribute writing or art, contact *info@noshmagazine.com.* **Jennifer SMIETANA** and **Anerio ALTMAN** (Kresge '96) are still together after meeting at UCSC; they were married in 1996 and both recently graduated from law school; friends may write them at *altana@earthlink.net.*
'97 Shay CANTY works for a high-tech company (AMD) in Sunnyvale, and her husband, **Jacob SARASOHN** (Kresge '00) is attending San Jose State's teaching-credential program; friends may contact them at *shay_canty@yahoo.com.* **Yan SHAM-SHACKLETON** is back in Hong Kong, studying film and TV production for the next year and enjoying working in a creative environment again; friends can reach her at *yanipoo@yahoo.com.*
'98 Maria Elena GOODEN and **Aaron JARSON** (Merrill '00) got married in San Luis Obispo in July 2002; Aaron works at Tarmin Solutions in San Diego, and Maria Elena received her master's in education and her teaching credential from UCSD in July 2002.
J. Stephen MILLER is a literary manager and works for Talent Scout Management, a division of Ross Media International; he works with new and produced writers for features and TV and assists them in marketing their scripts to major producers within the studio system; contact him at *Steven-M@ATalent Scout.com.*
'00 William STAUBLE is currently a student at Santa Clara University School of Law specializing in international and comparative law; he graduated from the International Human Rights Institute in Strasbourg in 2002; he can be reached at *wstauble@scu.edu.* **Tim WOODALL** has been working in Boston for the Nature Conservancy for about a year and has discovered a new phenomenon unbeknownst to Californians: win•ter (wn tr), noun (1) Usually the coldest season of the year, occurring between autumn and spring.

Oakes College

'80 Jerome DIXON is a practicing attorney in Baton Rouge, La., and he is coaching Little League Baseball and Pee Wee Football.
'82 After 14 years at a San Francisco commercial litigation firm, **Gregory GERMAIN** earned a master's degree in taxation at the University of Florida and worked as an attorney adviser for U.S. Tax Court Judge Renato Beghe; he joined the faculty at the Syracuse University College of Law in fall 2002.
'83 Mark ADAMS is living in San Jose with his wife and two daughters; he also spends time organizing the Silicon Valley alumni chapter; anyone who would like to help with events can contact him at *markandmarge@earthlink.net.*
'88 Jeff PIPER is working as a construction project manager and is currently managing construction of the Cesar E. Chavez Memorial Garden and Visitors Center in Keene, Calif., for the United Farm Workers Union.
'94 Kristine BURGESS Amodeo is a fine artist and also teaches from her art studio near Sonora, Calif.; she has three teenagers, a new husband, a home in the woods, and a web site: *www.sierra-arts.net/Kris-AmodeoIndex.html.*
'95 Kevin BROWN is an assistant men's basketball coach at Cal Poly, San Luis Obispo.
'96 Laura MOSS Allen was elected Teacher of the Year 2002 at Miller Middle School in San Jose, where she teaches sixth and seventh graders; she married Gene Allen in June 2002 in Santa Cruz.
'99 Maya CHINCHILLA is doing a master's at the UC Berkeley School of Journalism in combination with work in Latin American studies; she's living with Slug alums **Ann KIMBALL** (Crown '01), **Rachel GALLAGHER** (Cowell '00), and honorary roommate **Carmen ROJAS** (Oakes '00); send her e-mail at *mayachapina@yahoo.com.*
'00 Artur AKKERMAN recently received his master's degree in social work from New York University; his first book, *Somewhere Below the Great White Clouds*, was published by Seaburn Books in August 2002.
'01 Jonathan WISHNEV is building web sites and shooting virtual tours for real estate agents; friends may contact him at *jondabomb@aol.com.*
'02 Angelia CAREY recently started a job with the Soboba Band of Luiseno Indians in San Jacinto, Calif.; she is testing water and writing water-quality standards.

College Eight

'77 After earning a master's degree from Sacramento State University in 1979 and a Ph.D. from UC Santa Barbara in 1983, **Edward TAMSON** cofounded Performance Dimensions International, a business consulting firm, in 2001; he is also involved in world-class windsurfing in South Padre, Texas.
'81 Patrick CAMPBELL and his wife, Carolyn, completed the adoption of Peter, age 13, from Russia in April 2002; they also have two biological children, Thomas, 12, and Jessica, 10.
'83 Robert WEINER recently launched his own consulting practice in San Francisco, helping educational and nonprofit institutions make decisions about their use of technology for fundraising; his web site is *www.rlweiner.com.*
'84 Rachel Anne GOODMAN was the managing editor for the series *The DNA Files*, a five-part documentary series about genetics distributed by National Public Radio; the series won the 2001 George Foster Peabody Award and a Robert Wood Johnson Award for Health and Medical Reporting; among the producers were alumni **Rusten HOGNESS** (cert., science communication '93) and **Joe JORDAN** (M.S., computer science '81).
'87 Jon GUICE and his wife have a one-year-old and are living in the Bay Area; he is enjoying work combining sustainable development and technology, which includes other UC and UCSC alums, faculty, staff, and students.
'88 Christina FLAHERTY Callahan is a doctor of chiropractic, but she has chosen to stay at home with her three young children.
'89 Rachel SCHWARZ volunteers at the San Francisco Sex Information switchboard and publishes weekly articles on various body art topics for a woman-oriented web site *Bellaonline.com.*
'92 Wendy PRICE earned a second undergraduate degree in illustration at Art Center College of Design in Pasadena; she now owns and runs a graphic design firm.
'93 After years of global travel and grad school, **Jennifer DEMES Hayes** and **Andy HAYES** (College Eight '93) have found careers in the environmental planning field in Olympia, Wash.; they were expecting a baby in December 2002.
'96 Andrea HELZER graduated in May 2002 from the University of Pennsylvania with a master's in social work.
'99 Lara TETER Colthurst married **Christopher COLTHURST** (College Eight '96) in March 2001; they now own a home in San Diego, where Chris works at DivXNetworks, a video compression Internet company, and Lara works at SeaWorld as an animal-care specialist. As a participant in the Bay Area Minority Summer Clerkship Program, **Ricky LE** had a summer internship in 2002 at the San Jose business law firm of Hoge, Fenton, Jones & Appel; he is now a second-year student at Santa Clara University School of Law. **Kelly REICH** is working on an M.A. in communications from Cal State Fullerton; she is currently working for a nonprofit organization as assistant to the public information officer and also preparing a business plan for an evening of the 2003 Newport Beach Film Festival. **Sahar SHEIDA** graduated from law school in May 2002 and will be practicing law in Orange County.
'01 LeSanne ETIENNE has started a sedan and limousine company called Abacus Transportation Services, providing reliable and affordable airport transportation to the Santa Cruz community.

Graduate Studies

'82 David Neal MILLER (Ph.D., literature) writes that his beloved wife, Marcy J. Miller, succumbed to breast cancer; he is director of Yiddish and Ashkenazic Studies at Ohio State University and is currently pursuing research on Brooklyn and memory.
'87 Raul RODRIGUEZ (Ph.D., psychology) was appointed superintendent/president of San Joaquin Delta College in August 2002; prior to this appointment, Rodriguez was president of Los Medanos College in Contra Costa, Calif.
'88 Elizabeth HORAN (Ph.D., literature) was recently promoted to chair of the Department of English at Arizona State University in Tempe.
'91 Jeffrey MARSHALL (M.S., Earth sciences) received his Ph.D. in geological sciences from Penn State University in 2000 and is now an assistant professor of geology at Cal Poly, Pomona. **Francisco ROSADO-MAY** (Ph.D., biology) has been named chancellor of the University of the State of Quintana Roo on the Yucatan Peninsula of Mexico; his research is in the areas of agroecology, sustainable land use, the impacts of ecotourism, and the development and management of protected areas in the State of Quintana Roo.
'94 Magdalena ZSCHOKKE (Ph.D., literature) had her third book, a mystery, titled *Fulcrum*, published in November 2001 by First Books Library; her other titles, *Windswept* (1996) and *Salt Rock Mysteries* (2000), were both published by New Victoria Publishers.
'95 Laurea LONG (M.A., mathematics) moved to southern California in August 2002 and is teaching math at Saddleback College and Irvine Valley College.
'96 Susan BERNARDIN (Ph.D., literature), an assistant professor of English at SUNY Oneonta, is the editor of a new book from Rutgers University Press titled *Trading Gazes: Euro-American Women Photographers and Native North Americans, 1880–1940.*

In Memoriam

Dale HATHAWAY (Merrill '82), a political science professor at Butler University in Indianapolis, died May 22, 2002, in Florence, Italy, while leading a student study tour; he was 50.
Suzanna SHINER (Crown '93), a sonar engineer employed by Search, Survey and Recovery, Inc., and a crew member of the survey ship *Performer*, died June 25, 2002, in Norfolk, Va.; she was 35.
Joan TIERNAN (Crown '73), who in 1987 was one of the first women to graduate from UC Berkeley with a Ph.D. in engineering, died in December 2001. At the time of her death, Tiernan was working as a civil engineer for Suburban Water Systems in Covina, Calif.
Luci DALEY Vincent (Stevenson '74), an urban planner and a real estate attorney who worked for several Boston-area law firms, died July 26, 2002, after a long illness; she was 48.

SHMUEL THALER

Meg Zweiback *(Merrill '69)* and Tom Weiner (*Stevenson '70)* reconnected at their 30-year UCSC reunion

Periodicals

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