

UC SANTA CRUZ

R E I E W



Lessons from the Real World

Physics major Yvonne Rodriguez
credits two off-campus internships
with fueling her passion for learning

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UC Santa Cruz

REVIEW

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FROM THE CHANCELLOR

BY M.R.C. GREENWOOD

UNDERGRADUATES AT UCSC aren't shy when it comes to telling me what they like about their educational experience: access to distinguished faculty, unparalleled research opportunities, state-of-the-art facilities.

For many of our students, however, UCSC's commitment to undergraduate education is also defined by the campus's emphasis on service learning, or what I like to call "hands-on" education. UCSC has a strong track record of fostering field-study programs, internships, and independent-study placements that give our students a chance to apply what they are learning in the classroom to the "real world."

More of our students than ever are taking advantage of these opportunities. Last year, UCSC students contributed more than 200,000 hours of service to the community through service-learning placements.

Some of these students work far from Santa Cruz—either elsewhere in the state, in other parts of the country, or even overseas. But the majority devote hours of service right here in the Monterey Bay Area. Our schools, businesses, nonprofit organizations, and other agencies wouldn't be the same without the talent offered by UCSC students.

Students are pleased to get the kinds of hands-on work experience that service learning offers, and educational researchers have documented the ways in which high-quality programs



DON HARRIS

Service learning deepens students' understanding of theoretical material, increases retention, motivates students, and sharpens the focus of their studies. . . . Our students are the primary beneficiaries of this approach to education, but service learning is an outstanding example of an educational initiative that benefits everyone.

benefit students: Service learning deepens students' understanding of theoretical material, increases retention, motivates students, and sharpens the focus of their studies.

Janet Eyler, a Vanderbilt University education professor and a leading researcher in the field of service learning, recently compared the ways students learn about the legislative process. She found that students whose work included internships with their state legislature knew more about the real forces that shape public policy—including interest groups and the informal power structure of the legislature—than those whose studies were confined to the classroom.

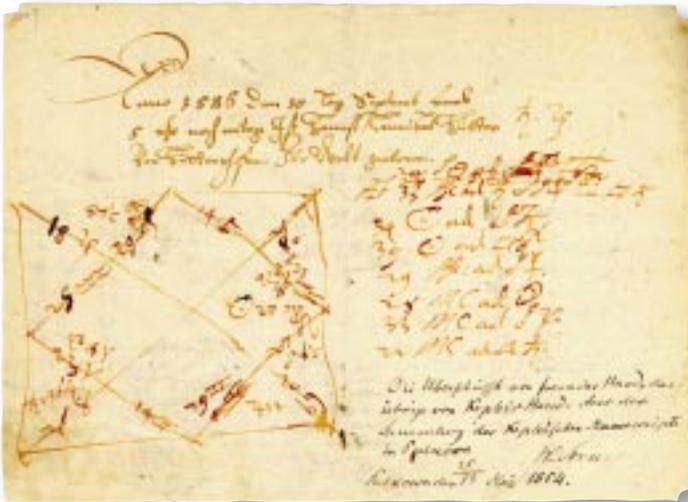
In other words, it is one thing to memorize the steps it takes to get a bill passed into law, and it is quite another to see the political process in action.

In this issue of the *Review*, we make the case for this kind of "hands-on" education. Our cover story describes how UCSC's field-study, internship, and independent-study programs are integrated into the curriculum. Our students are the primary beneficiaries of this approach to education, but service learning is an outstanding example of an educational initiative that benefits everyone.

A handwritten signature in blue ink that reads "MRC Greenwood".

M.R.C. GREENWOOD
Chancellor

COURTESY UCSC SPECIAL COLLECTIONS



The recently discovered horoscope, authored by Kepler four centuries ago

Found at UCSC: Horoscope written by Johannes Kepler

A 400-YEAR-OLD manuscript penned by one of history's greatest astronomers was recently discovered at UCSC.

The manuscript is a horoscope authored by 16th-century astronomer Johannes Kepler sometime in the late 1500s or early 1600s. The discovery was made by Anthony Misch, an astronomer at Lick Observatory.

Misch was researching solar eclipse expeditions in the University Library archives when he discovered the unassuming six- by eight-inch framed paper in a drawer of miscellanea. The horoscope was annotated in German.

Misch, a book collector who speaks German, had an immediate sense of the significance of what he held in his hand.

"It was a pretty thrilling moment," Misch said. "I knew right away this had potential to be a pretty spectacular discovery. As I looked the document over my hand was shaking."

Kepler, who lived from 1571 to 1630, is best known

for his discovery of the laws of orbital motion. He was also a phenomenal mathematician and was responsible for major breakthroughs in telescope optics. He is considered to be, along with Copernicus and Galileo, among the most important astronomers of the modern era.

UCSC purchases Terrace Point property

UC SANTA CRUZ HAS acquired approximately 55 acres adjacent to the campus's Joseph M. Long Marine Laboratory and the new Seymour Marine Discovery Center. The property was purchased from Wells Fargo Bank for \$4 million.

It is expected that UCSC will permanently protect the wetlands and some other portions of the site, possibly as a natural reserve. Although UCSC has not developed plans for the remainder of the site, other potential uses of the land include development of ocean and coastal research facilities and some complementary housing. In addition, there

is discussion of the development of a science park for children that would augment the educational programs slated for the Seymour center.

"This is a very positive decision for everyone," noted Chancellor Greenwood. "UC Santa Cruz welcomes the opportunity to enhance our existing coastal research and teaching resources, and at the same time, we take seriously the responsibility for careful stewardship of this unique property. This acquisition advances our prospects for new research partnerships."



SHAMUEL THALER

Chancellor Greenwood, on the Terrace Point site

\$17.7 million grant for marine research

A CONSORTIUM OF marine scientists from UCSC and three other major universities has received a grant of \$17.7 million from the David and Lucile Packard Foundation to conduct ecological research aimed at improving the conservation of marine ecosystems.

The Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) brings together four leading centers of marine science research: UC Santa Cruz, UC Santa Barbara, Stanford University, and Oregon State University. By combining their strengths, PISCO will enable researchers at these institutions

to conduct coordinated studies of coastal ecosystems on an unprecedented scale.

The five-year project will involve researchers from diverse fields working toward an integrated picture of the coastal environment and ecosystems.

A major focus of the group's efforts will be to study the movements and interactions of fish and other marine organisms over a 1,200-mile stretch of ocean from Oregon to southern California, said Peter Raimondi and Mark Carr, biology professors at UCSC and two of the project's principal investigators. "This partnership allows us to look at marine ecological processes at the scales at which things really happen," Raimondi said.



The grant will fund research into the interactions of marine organisms such as rockfish (above) and rock lobster (below).



PHOTOS COURTESY NOAA CENTRAL LIBRARY

\$1.5 million gift for Jewish studies

WITH A GIFT OF \$1.5 million, a San Francisco Bay Area couple has established an endowment for Jewish studies at UCSC. The gift is the largest private donation ever received by the Humanities Division.

The gift comes from Helen and Sanford Diller of Woodside. Named the Helen and Sanford Diller Family Endowment in Jewish Studies, the donation will support and expand UCSC's interdisciplinary program, which focuses on modern Jewish history, life, and cultures.

"We are honored that the Dillers selected UCSC as the home for this endowment," said Chancellor Greenwood. "Their generous gift constitutes the cornerstone of a major UCSC effort to build Jewish studies."

The gift was made through the Jewish Community Endowment Fund of the San Francisco Jewish Community Federation.

UCSC psychologist to receive field's 'Nobel'

ANYONE WHO HAS taken an introductory psychology class or read a best-selling self-help book has been touched by the work of Elliot Aronson, a man whose research has fundamentally shaped our knowledge of what motivates human behavior.

From cognitive dissonance to the causes of interpersonal attraction, Aronson's research has pushed the envelope, often challenging established theories and always addressing important social problems, including prejudice reduction, energy conservation, and AIDS prevention.

One of the most distinguished social psychologists of our time, Aronson, a professor emeritus of psychology at UCSC, will receive the American Psychological Association's 1998–99 Distinguished Scientific Contribution Award at the APA's convention in August. Considered the "Nobel Prize of psychology," the award is the highest recognition offered to psychologists for a lifetime of research. Previous recipients



Elliot Aronson

include B. F. Skinner, Carl Rogers, Jean Piaget, and Leon Festinger.

Aronson, 67, who came to UCSC in 1974, credits his mentors and students with his success. "I've been very lucky to have had some brilliant teachers and to have worked with some terrific students along the way," said Aronson. "Social psychology has always thrilled me because it is such a wonderful blend of art and science. To tell you the truth, I don't think I'm that smart—I just found the perfect thing in the world for me. I can't imagine I would've been as happy or productive doing anything else."

New policy increases UC-eligible students

THE UNIVERSITY'S BOARD of Regents has approved changes in freshman eligibility that will make the top 4 percent of students from all California public high schools eligible for UC.

UC faculty developed the new criteria following more than a year of considering ways for the university to increase the number of UC-eligible students in order to meet its obligation to the state to enroll from the top 12.5 percent of California high school graduates and continue to maintain academic quality.

Granting eligibility to students who rank in the top 4 percent of each high school class based on UC-required courses will make nearly 3,600 additional students eligible for the university.

Those new students increase the percentage of high school graduates eligible for UC from 11.1 to 12.5 percent as required by California's Master Plan for Higher Education.

This new path to eligibility greatly enhances UC's ability to attract students from across the state, particularly from rural and inner-city schools, said UC President Richard C. Atkinson.

UCSC considered for adaptive optics center

A COMMITTEE FROM the National Science Foundation visited UCSC recently to evaluate a proposal to create a national Center for Adaptive Optics on campus. The center would coordinate the efforts of researchers across the country working in the new field of adaptive optics, which has major applications in astronomy and vision science.

Adaptive optics is a method to actively compensate for changing distortions that cause blurring of images.



The adaptive optics system at UC's Lick Observatory uses a laser beam (captured in this time-exposure photo) to measure turbulence in the atmosphere.

Turbulence in the atmosphere causes blurring of images obtained by ground-based telescopes. Similarly, internal imper-

fections and small motions in the eye result in blurred vision and interfere with efforts to study the living human retina.

COURTESY LAWRENCE LIVERMORE NATIONAL LABORATORY



UCSC made May 2 a day to celebrate the arts as a dedication ceremony and open house officially inaugurated several major new arts facilities on campus. LEFT: Onlookers watch a bronze-pouring demonstration by Art Department staff and students. RIGHT: Performing at the celebration were two UCSC groups, *Taki Nan* (above), one of UCSC's Latin American ensembles; and *Swara Sauti* (below), UCSC's Balinese gamelan ensemble.

Celebrating the arts at UCSC

WHEN HUNDREDS of people turned out for UCSC's Celebration of the Arts in early May, the halls echoed with the sounds of music, theater, and art in action. The afternoon event featured an open house that offered performances, backstage tours, lectures, rehearsals, concerts, and demonstrations.

In addition, many guests attended a dedication ceremony celebrating the completion of a number of new arts facilities. Among those facilities are music and art studios, a 391-seat Multimedia Theater, the Experimental Theater, and the Music Center.

The event was initially conceived simply as a dedication of new arts facilities, but rather than emphasizing the walls that were raised, the day's program celebrated the learning and creativity that have and will take place within those walls.

Edward Houghton, dean of

the arts at UCSC, led the decade-long push to secure funding and space for the new facilities, but Houghton was the first to point out that the buildings are not the only accomplishment of the last decade. "We have many reasons to celebrate: the completion of these exceptional facilities during a time when funding for the arts was

"In these walls, future generations of Picassos, Coppolas, Oliviers, and Beethovens will study and learn."

shrinking, the expansion of academic programs in the arts at UCSC, an all-time high in enrollments in the arts at UCSC, and the emergence of tremendous collaborations between the campus and the community. As teachers, artists, parents, and audience members, the arts belong to all of us, and we all have cause to celebrate this exciting time for the arts in Santa Cruz."

The May 2 dedication ceremony featured works by film and video students and a collaborative work by Arts Division faculty members

Nobuho Nagasawa, Sharon Daniel, and Peter Elsea. Titled *Opening*, the work featured video and electronic music components, written text, and—strung colorfully outside the Multimedia Theater—bright red binoculars so that guests could better read the text. Special guests at the dedication were UCSC alumni Anne Flett-Giordano and Chuck Ranberg (co-producers of the TV show *Frasier*) and Lance Linares, executive director of the Community Foundation of Santa

Cruz County.

In her comments at the dedication, Chancellor Greenwood noted that, "In these walls, future generations of Picassos, Coppolas, Oliviers, and Beethovens will study and learn. The teachers of our grandchildren and great grandchildren will begin here. Perhaps our next mayor or governor, or the CEO of a major corporation, will gain a new way of looking at old problems because of time spent inside the walls of the arts at UC Santa Cruz, honing his or her creative potential."

Chancellor urges scientists to expand role in K–12 education

SPeAKING AT THE annual meeting of the American Association for the Advancement of Science, UCSC's chancellor urged her fellow scientists to become directly involved in efforts to improve science education and the public's understanding of science.

Presiding as president of AAAS, Greenwood advocated changes throughout the educational pipeline and proposed a national campaign to promote the involvement of scientists on school boards.

While recent scientific discoveries and advances give scientists ample cause to celebrate, the United States may be slipping behind other nations in its ability to inspire and educate the next generation of scientists, Greenwood said at the meeting in Anaheim this past January.

"We can already see indications that the next generation is not receiving the preparation necessary to maintain the excellence that U.S. science currently enjoys," Greenwood said, pointing to the results of recent surveys that show U.S. 12th graders near the bottom in international comparisons of science and math ability.

Greenwood urged scientists, engineers, and other scientifically literate professionals to get involved in K–12 education by serving on school boards. She proposed an AAAS program called "Project 20/20" to sustain and support these board members with information and advice to help them protect and enhance scientific content and accuracy in schools.

"Education for our children, and lifelong education for all of us, must be paramount in this evolving era," Greenwood said.

In Memoriam

Angus Taylor, third chancellor of UCSC, vice president of academic affairs under four UC presidents, and chairman of the universitywide Academic Council during the Free Speech Movement, died in a Berkeley hospital in April after a brief illness. He was 87.

Chancellor from February 1976 to July 1977, Taylor is credited with helping build an organizational foundation upon which the campus has grown.

At his family's request, contributions in Angus Taylor's name may be made to the UC Santa Cruz Foundation and designated for the "Angus and Patsy Taylor Fund," an endowment that supports the academic activities of UCSC's Cowell College.

Sheila Hough, a lecturer emerita in social sciences, died in April; she was 67. Hough worked at UCSC from 1966 until her retirement in 1991 as a lecturer for the Modern Society and Social Thought Program, a lecturer in the Stevenson Core Course, administrative coordinator for the Stevenson core course, and counseling psychologist.



Angus Taylor

Gurden Mooser, whose decades-long association with the campus included 13 years as the founding head of University Relations, died in February in his Santa Cruz home after a lengthy illness. He was 85.

Assistant chancellor for University Relations from 1965 to 1978, Mooser helped the campus attract major gifts that established the college system and provided private support to many other emerging academic and administrative programs.

Mooser formed the UC Santa Cruz Foundation in 1974 and served as the foundation's first executive secretary.

At the family's request, donations in Mooser's name may be made to the UCSC Foundation for the Seymour Marine Discovery Center.



Participating in the gift ceremony were (l-r): Michael Twombly (Cowell '69), David Graves (Crown '74), EVC John Simpson, Alumni Association president Steve Klein, Ronna Perelson (Porter '79), and Dobro Goodale (Kresge '94).

Alumni class gifts generate \$230,000

THE GENEROSITY of four classes of UCSC graduates has generated nearly a quarter of a million dollars for the UCSC Alumni Association Scholarship Fund and other campus programs.

Representatives of the classes of '69, '74, '79, and '94 presented checks totaling \$180,000 to Executive Vice Chancellor John Simpson at an alumni reunion luncheon during UCSC's Banana Slug Spring Fair in mid-April. The UCSC Alumni Association added \$50,000 in the form of a challenge grant, produc-

ing a total of \$230,000.

"I want to thank all alumni, particularly the pioneers and the classes of 1974, 1979, and 1994, for their remarkable support of this campus and its students," Simpson said. "It is so wonderful that while celebrating the time you shared as students at UCSC, you have chosen to support today's students, who follow in your footsteps."

Some \$140,000 of the gift will go to the UCSC Alumni Association Scholarship Fund, which provides support to students with financial need. Approximately \$90,000 will benefit other areas of the campus such as college programs and academic divisions.

UCSC, California Academy of Sciences formalize ties

UCSC AND THE California Academy of Sciences (CAS) have agreed to combine strengths in pursuit of their common interests in biological research and public education.

Chancellor Greenwood and CAS Executive Director Patrick Kociolek signed a memorandum of understanding formalizing the ties between the two institutions in a ceremony in April at the UCSC Arboretum.

"The California Academy of



Chancellor Greenwood and CAS Executive Director Patrick Kociolek shake hands over an agreement formalizing ties between their two institutions.

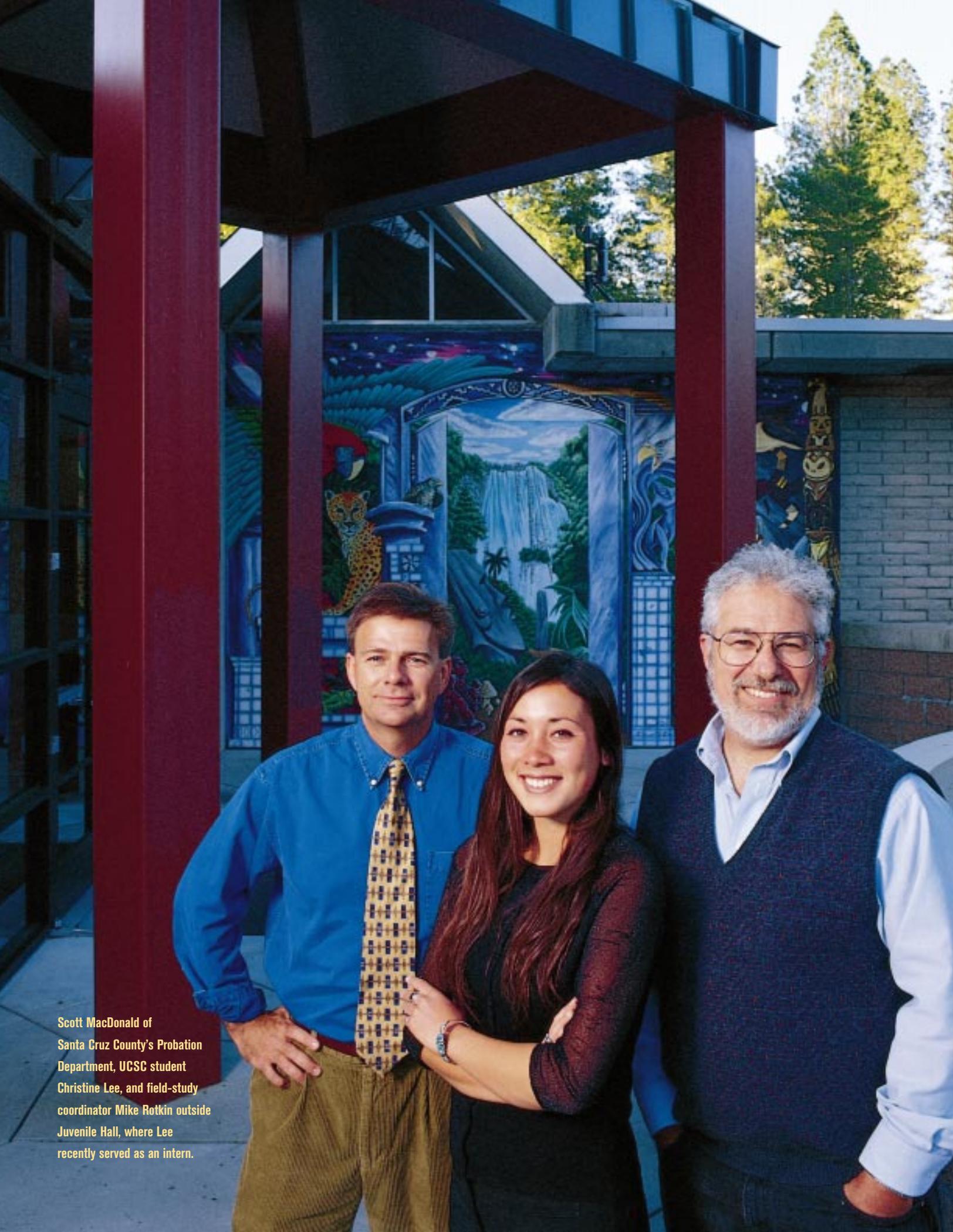
Sciences has resources and expertise that complement those of UCSC, particularly in areas related to the increasingly

important issue of understanding the value of biodiversity," Greenwood said.

The extensive collections of

natural history specimens at CAS are among the world's largest and provide essential tools for comparative studies in biodiversity. Experts in the academy's eight scientific departments include leading authorities (known as systematists) on the classification of different types of organisms.

"The academy has biologists and systematists whose work dovetails nicely with research at UCSC in biology, chemistry, and marine science, and we hope the memorandum of understanding will foster cooperative interactions in these areas," Kociolek said.



Scott MacDonald of Santa Cruz County's Probation Department, UCSC student Christine Lee, and field-study coordinator Mike Rotkin outside Juvenile Hall, where Lee recently served as an intern.

The World is their classroom

by JENNIFER McNULTY

Tell me and I forget,

Teach me and I remember,

Involve me and I learn.

—BENJAMIN FRANKLIN

KIDS AT JUVENILE HALL CAN BE TOUGH AND INTIMIDATING, but sometimes the right person can break through those barriers and make a difference. Christine Lee, a master's student in education at UCSC, was that person for a 17-year-old named Richard.*

Lee tutored Richard as part of a UCSC field-study class called New Vistas in Juvenile Justice. She helped him prepare for his high school equivalency exam, and she was there to celebrate when he passed. His parents were not.

"He's so smart, but he's been on and off the streets since he was eight years old," said Lee, who hopes the milestone makes a lasting difference in Richard's life.

For Lee, her internship at Juvenile Hall confirmed her interest in working with at-risk youth. "It gave me a lot of energy to move forward with my teaching," she said. "It gave me a sense of urgency and of hope, because I saw both: The need for urgency, and that there is hope."

Scott MacDonald, assistant division director with the County of Santa Cruz Probation Department, says UCSC interns like Lee provide critical help for youth who become entangled with the juvenile justice system before they're old enough to drive.

"Christine is an example of why I do this program," said MacDonald, who supervises 20 interns every quarter. "Helping a kid get through that exam is remarkable. Now I've got kids at Juvenile Hall saying, 'When are the interns coming back? I want an intern.'" ►

"My fear is always that students will come back cynical and discouraged, but it's always the opposite. They come back feeling less cynical, more energized, and believing they can make a difference."

—Mike Rotkin

* Not his real name

Portia Edwards was inspired to major in art history after her internship at the Smithsonian's Hirshhorn Museum in Washington, D.C.

Internships and field-study placements give students a chance to integrate the theory they learn in the classroom with practical experience. Dubbed “experiential education” and “service learning” by researchers, these opportunities for hands-on learning enrich the academic experience while contributing to personal and career development.

The roots of service learning at UCSC go back to the earliest days of the campus, when faculty members like William Friedland and Herman Blake, and staff member Nick Royal, took up the cause and fought to house field-study programs under the academic wing of the university rather than under career services. After more than 30 years at the forefront of service learning, UCSC is now a model for schools across the country, many of which are trying to re-create what has been done here.

New research confirms what early supporters like Friedland and Blake suspected: Experiential learning within a structured academic program deepens students’ understanding of theoretical material and motivates students to learn more. Students retain more of what they learn, they perform better academically, and their subsequent studies are more focused.

“High-level field-study work that is integrated into the curriculum helps students develop a complexity of understanding. It enhances learning itself,” said Janet Eyler, a Vanderbilt University education professor and coauthor of the new book *Where’s the Learning in Service-Learning?*

With validation from researchers like Eyler, support for experiential education is taking off. Professional associations are growing, attendance at national conferences is increasing, and a growing number of communities like Santa Cruz are reaping the benefits as university students fan out into community organizations, schools, government agencies, nonprofits, and businesses, eager to test their knowledge and develop their skills.

AT UCSC, SERVICE LEARNING is almost synonymous with the name Mike Rotkin. A lecturer in the Community Studies Department, Rotkin began sponsoring students in field studies when he arrived on campus in 1969. He has officially coordinated the department’s field-study program for two decades. Rotkin’s is a front-row seat from which he watches the transformation of students who participate in service learning.

“Aside from the practical experience of living outside the cocoon of student culture, students come back with a more complex understanding of the world,” says Rotkin. “My fear is always that they’ll come back cynical and discouraged because the world is a difficult place, but it’s always the opposite. They come back feeling less cynical, more energized, and believing they can make a difference.”

Last year, UCSC students contributed more than



200,000 hours of service through field-study placements and internships. Students are particularly gung ho about field-study courses offered by the Social Sciences Division: More than 1,200 students enrolled in the division's field-study courses last year. About 80 percent of those placements were in the Santa Cruz region, but students regularly pop up elsewhere in California, the United States, and internationally. Nearly half chose to work with nonprofits, about a third were in education, and the remainder worked in government and business.

"Field study is such a good match for our students," said Martin Chemers, dean of the Division of Social Sciences at UCSC. "It gives them a chance to see the theory they're learning unfold in the real world, and at the same time they're able to make a positive contribution to society."

Students in every division benefit from service-learning opportunities, however. For Yvonne Rodriguez, internships in a geochemistry lab on campus and then with the United States Geological Survey gave her a chance to work in the world of science for the first time.

"Especially in the sciences, what you're learning in the classroom is the basics," she said. "During an internship, you get to apply what you've learned. You set up your experiment, go out there, and do it. You have to analyze your own data and use your brain to figure out what's going on. You learn how to be a scientist."

Rodriguez, a physics major who transferred to UCSC in 1995 from Chabot College in Hayward, credits her internships with building her confidence, too.

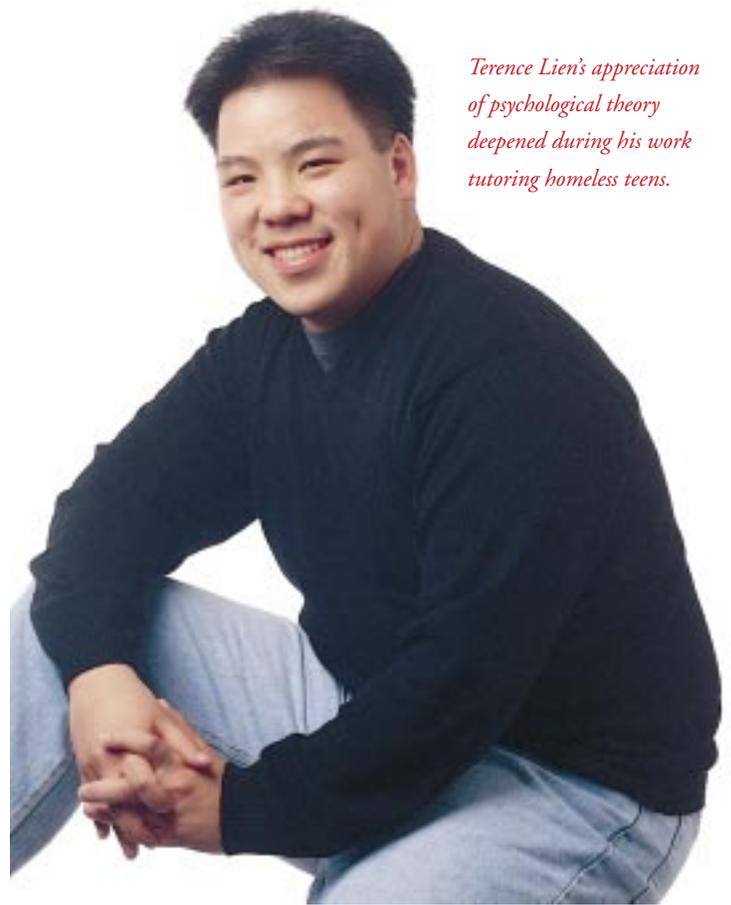
"My parents didn't go to college, and I had no idea what it would be like to work with scientists," said Rodriguez, a single mother of three who juggles school, work, and parenting responsibilities. "Being a woman going into the sciences and hanging out with the guys, I didn't know what to expect. It was demystifying for me to see that they're nice people and that it's okay to ask questions."

"Christine is an example of why I do this program. Now I've got kids at Juvenile Hall saying, 'When are the interns coming back? I want an intern.'"

—Scott MacDonald

If internships opened up the world of science for Rodriguez, art history major Portia Edwards surrounded herself with great art during her experience as an intern at the Hirshhorn Museum and Sculpture Garden in Washington, D.C.

Edwards worked in the public programs department of the Smithsonian Institution's museum of modern and contemporary art. It was



Terence Lien's appreciation of psychological theory deepened during his work tutoring homeless teens.

a pivotal experience for Edwards, who helped organize a poetry workshop for writers inspired by the visual arts. Her final project was to edit a volume of poems created in response to the museum's show of George Segal's sculpture.

"I love art history, but I'd been reluctant to major in it because I was worried about getting a job after college," explained Edwards, who changed her major from global economics. "Working in the museum convinced me to go into art. Since it's what I really love and am passionate about, I'll find something to do with it."

The internship also shored up Edwards's academic motivation.

"I think experiential learning is the only way to fully understand what I've been studying," said Edwards, who described with awe the experience of seeing in real life the paintings she had studied for years in the slide library. "You get a sense of the value of your academic work. I've always been into studying, but now when I'm reading a journal article, I'll check the cross-references."

Edwards did her internship through the campus's UCDC program, which sends about 40 UCSC students to Washington, D.C., each year. The program offers an exciting combination of course work, field research, and work experience.

"It's an incredible opportunity," said Edwards, who would regularly cross the Mall to view paintings at the National Gallery. "I can't imagine not having done it."



Yvonne Rodriguez got to apply what she'd learned in the classroom during two science internships.

Edwards's supervisor, Teresia Bush, said she came to rely on Edwards to an unprecedented degree. "Portia was extremely resourceful and mature," said Bush. "You find very bright interns all the time, but you don't always find that enthusiasm about learning that creates learning opportunities. Portia would go to the library and read about artists she didn't know. She was remarkable in that way."

FIVE DEPARTMENTS AT UCSC offer formal field-study programs: psychology, environmental studies, economics, Latin American and Latino studies, and community studies, which requires majors to participate in a two-quarter, full-time field study. In education, field-study placements are an integral part of the undergraduate minor, but academic credit for service learning is available to students in every department. Strikingly, women are three times as likely to participate as men, which Rotkin believes reflects the preponderance of women in the "helping professions."

Most departments require students to be juniors before they can participate in service learning. In community studies, students are required to take two courses specifically to prepare for their placement and at least one upon their return.

"Field study enhances people's learning. We know that scientifically," says Rotkin. "But it's not an alternative to tradi-

tional education. Our goal is to integrate the two. We want students to come back to a rigorous traditional academic education, motivated to read, study, use the library, and do more research. The two need to go together."

Faculty notice the difference, too. As students return to the classroom, they're eager to engage with the material in a more critical way. "It allows for more of a dialogue as students ask deeper, more complex questions," says Rotkin. "As teachers, that's more challenging, and it's more fun."

To encourage students to make the link between academics and their "real-world" experiences, faculty advisers at UCSC typically require an academic paper, a final project, and a journal that charts the student's experiences. Some host weekly seminars. Vanderbilt University's Eyer endorses all four tools as appropriate means of reflection.

"All of our most prestigious professions involve an active learning component—doctors in residencies, lawyers in legal clinics, physicists in the lab," said Eyer. "Think about it. Whenever we're serious about learning, we don't just put people in rooms and talk to them."

STUDENTS ENROLL in service learning for different reasons. One of the most popular offerings in the Economics Department is the new major in business management economics, where students are eager to prepare for jobs. There aren't many who can match Adam Roseman's enthusiasm. A junior, Roseman has bolstered his schoolwork with two demanding internships, first as a financial analyst intern for Autodesk, a Cupertino-based manufacturer of computer-assisted design software, and then as an analyst intern in the corporate finance department of U.S. Bancorp Piper Jaffray, an investment banking firm headquartered in Minneapolis.

"I learned a ton at Autodesk—a ridiculous amount," said Roseman, who

"All of our most prestigious professions involve an active learning component—doctors in residencies, lawyers in legal clinics, physicists in the lab. Whenever we're serious about learning, we don't just put people in rooms and talk to them."

—Janet Eyer

has had to invest in three suits, a sports jacket, and slacks since venturing into the heart of corporate America. “And now Piper Jaffray is a perfect match for my professional goals.”

Roseman analyzes corporate financial statements to help establish the current and potential value of companies. “It’s quite a bit of responsibility. You don’t want to make mistakes,” he said. “It’s very exciting for me.”

If Roseman’s focused career goals have shaped his college experience, his internships have helped him hone his selection of classes, pointing out gaps in his education. “I’m going to take *Corporate Finance* next year,” he said. “And *Money and Banking*, too.”

Terence Lien, who graduated in psychology last fall, spent two quarters tutoring homeless teens for Above the Line, an organization that operates a school for homeless teens in conjunction with the Santa Cruz County Office of Alternative Education.

As a classroom- and case-management aide, Lien helped students get back on track to attend mainstream schools. The experience offered him numerous opportunities to apply theories he’d learned in the classroom. “It helped me understand some of the literature and see how it can apply,” he said. “But it’s also a different experience. Learning from a book and seeing it applied in real life are two different things for me.”

Lien chose the position because he wanted to broaden his experiences before going to graduate school, but it has turned into something more. Now out of school, he has gone back as a volunteer to work with the kids.

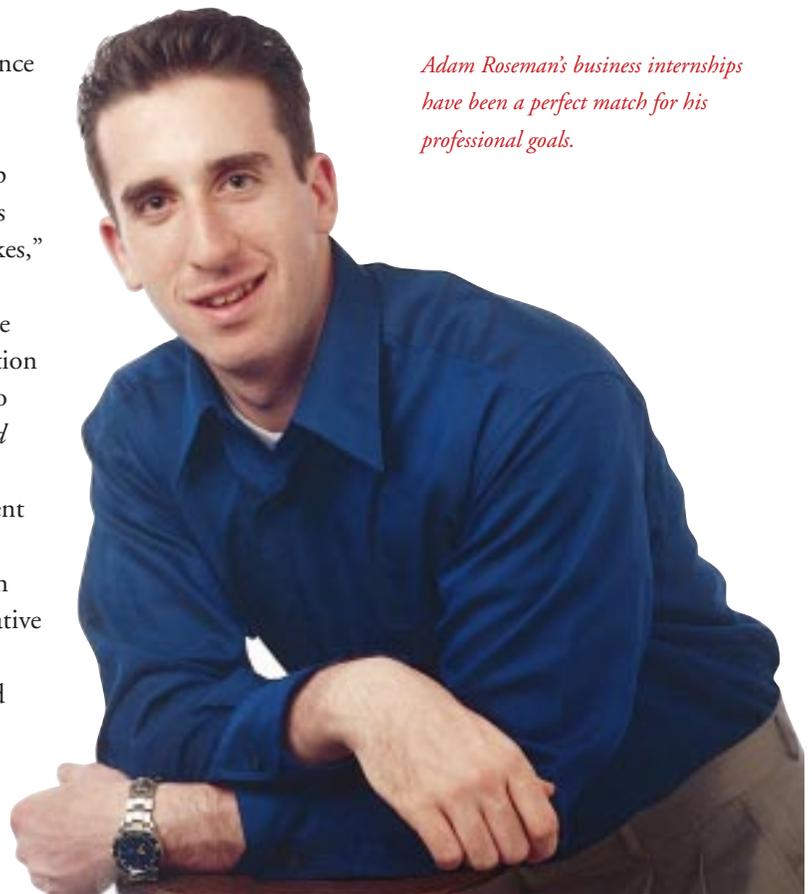
“During my internship, the kids couldn’t believe I wasn’t being paid,” said Lien. “But just being there for the kids makes me feel good.”

JUST AS THE BENEFITS OF EXPERIENTIAL LEARNING are multiple, so are the beneficiaries. Students rave about their opportunities to grow personally, intellectually, and professionally, and their field supervisors appear to be equally enthusiastic about what they get out of the relationships.

Like Scott MacDonald, the intern coordinator at Santa Cruz County Probation, many appreciate the dedication students bring to their field studies.

“UCSC students tend to have a real commitment to doing something in society,” said MacDonald, a 1983 alumnus whose department is moving away from traditional law-enforcement strategies toward a “holistic” approach that emphasizes social work and early intervention. “We couldn’t do what we’re doing for the kids without the help of the UCSC interns.”

Karen Delaney, director of the Volunteer Center of Santa Cruz County, echoes MacDonald’s comments, saying that many agencies, nonprofits, and service organizations couldn’t



Adam Roseman's business internships have been a perfect match for his professional goals.

survive without the help UCSC students provide.

“A lot of university students like working with kids and youth, and they play a very powerful role as mentors,” said Delaney, a 1981 alumna whose organization helps place about 6,000 volunteers annually. “It really makes a huge difference in the lives of the kids.”

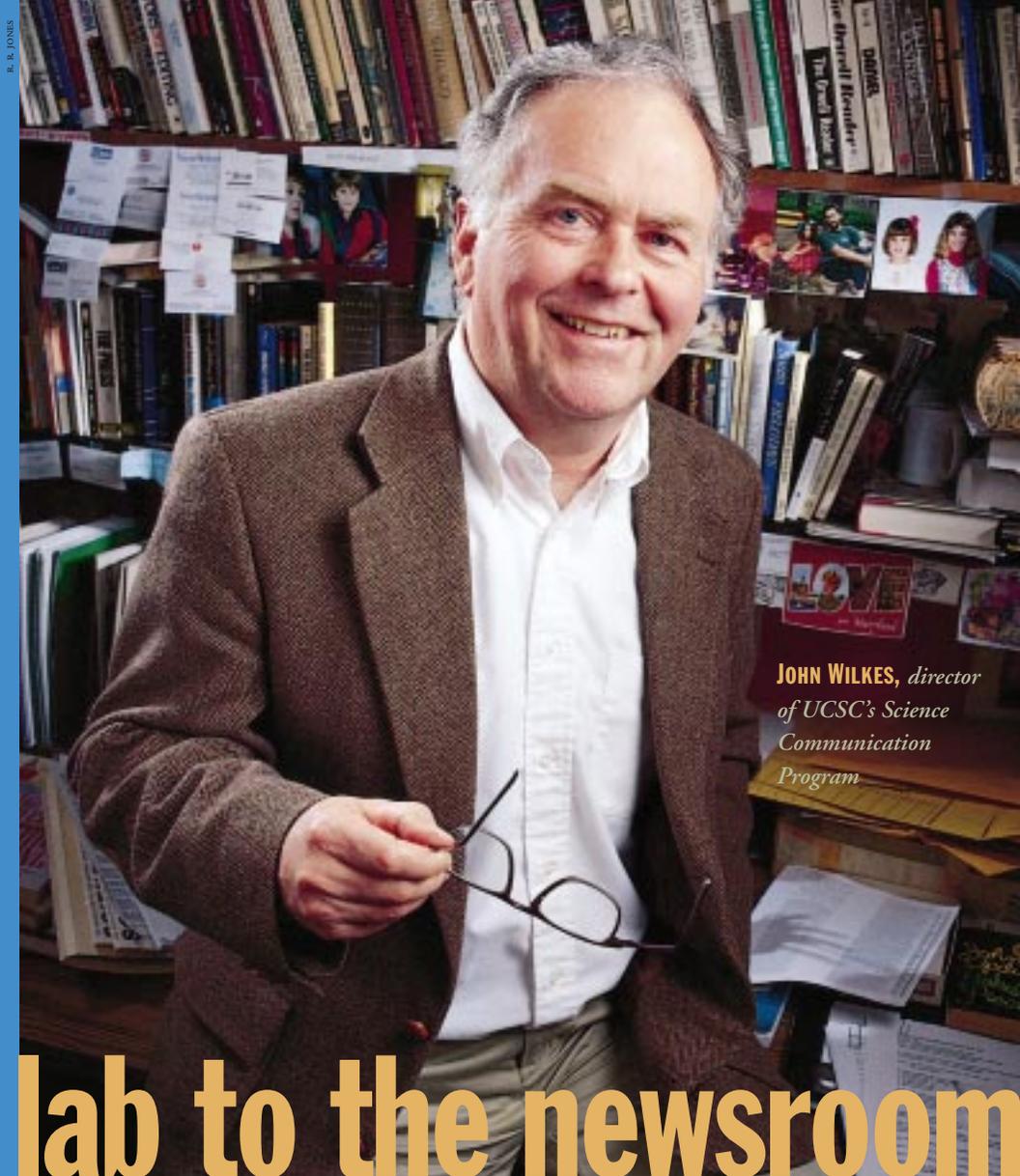
Service learning can have civic value, too, allowing students to get a sense of how communities work and how they can have an impact. Some students find their introduction to such work so rewarding that they go on to establish their own nonprofit agencies or service organizations after graduation.

Experiential education is being embraced at all levels. Delaine Eastin, California’s superintendent of public instruction, believes that service learning can help prepare K–12 students academically as well as contribute to their development as good citizens, and she has urged school districts across the state to incorporate service learning into their curricula. And California Governor Gray Davis wants to require all students at state colleges and universities to perform some community service as a condition of graduation.

As the rest of the educational world recognizes the value of service learning, UCSC students are doing what they’ve been doing for more than three decades: leading the way.

Rotkin, a proud facilitator of three decades of experiential learning, sums up its value succinctly: “It’s a profoundly different model of how to learn,” he said. “And it works.”

Instead of traditional careers in the sciences, students in UCSC's Science Communication Program work to make complex subjects accessible to the public



JOHN WILKES, director of UCSC's Science Communication Program

From the lab to the newsroom

BY THE TIME CAMILLE Mojica Rey graduated from UC Berkeley with a Ph.D. in integrative biology, she had decided a career in academic science was not for her. She wanted to be a writer, but she also wanted to use her knowledge and training in biology. UC Santa Cruz's Science Communication Program showed her how to do both.

Rey completed the program in 1997, worked as a medical writer for the *San Jose Mercury News* and the *Monterey County Herald*, and is now associate editor of New York-based *Latina*, a bilingual magazine for Hispanic women, where

she oversees the health section.

"I love it," Rey says. "I feel like I'm putting my scientific training to work and having more of an impact than I could from behind a lab bench."

The Science Communication Program, launched in 1981 by director John Wilkes, actually comprises two separate tracks, one in science writing and

another in science illustration (see sidebar). Both are one-year graduate programs leading to a certificate in science communication. Though each track only admits ten students per year, UCSC has become known nationally and internationally for producing science writers



MONTEREY COUNTY HERALD/AMRE REIFA

CAMILLE MOJICA REY ('97) is associate editor of *Latina* magazine.

and illustrators of the highest caliber.

The science writing program (the better known of the two tracks) takes in students trained as scientists and turns out writers who can make the esoterica of science understandable and accessible to a general audience. Its

graduates—about 180 so far—include writers for major metropolitan newspapers and national consumer magazines, designers of exhibits for aquariums and museums, and authors of popular books. Some have gone into radio and television work, others work in the news offices of universities and national laboratories, and still others have ventured into the brave new world of multimedia communications.

Some students, like Rey, come to the program with Ph.D.s from major research universities, while others come with bachelor's degrees from small liberal arts colleges. The rest fall somewhere in between.

"All of our students, I think it is safe to say, could have had a career in academic science if they had chosen to continue on that path," Wilkes says.

The writing program guides them onto a very different career path, with remarkable success. Editors who have worked with graduates of the program are among its biggest fans.

"Santa Cruz turns out more high-quality journalists in the science writing area than anyone else," says Justin Mullins, San Francisco bureau chief for the international science magazine *New Scientist*, who has several graduates of the program either on his staff or freelancing for him.

Ellis Rubinstein, editor of the weekly journal *Science*, agrees. "I don't know of another program that has had as many outstanding graduates year after year," Rubinstein says. "It has produced some of the best science journalists we have."

The program only accepts students with science degrees and research experience. Wilkes likes to point out that, with his Ph.D. in English literature, he wouldn't even be considered for the program he runs. Applicants must also



ROSIE MESTEL ('91) is health writer at the Los Angeles Times.

show an aptitude for writing. Perhaps because of his literary background, Wilkes has a knack for spotting applicants with writing talent.

"I like being a talent scout, finding people out there who would not be able to get into the profession

if it were not for a weird program like mine," Wilkes says. "They would not go to journalism school—they do not want to be journalists—but they do want to write for the public. Sometimes they just don't realize that's journalism."

IN JANUARY, UCSC Chancellor M.R.C. Greenwood hosted a reception for Wilkes at the annual meeting of the American Association for the Advancement of Science (AAAS), a meeting Greenwood presided over as AAAS president. She presented Wilkes with a plaque honoring him for "outstanding contributions to public understanding of science."

With neither a science background nor much journalism experience, Wilkes drifted almost by accident into the teaching of science writing. In 1976, he was a part-time lecturer at UCSC (where he had received all of his degrees), teaching a three-quarter sequence in English Romanticism.

He had also begun writing articles about cars ("the one technical area I felt comfortable in") for *Road & Track* magazine and was getting excited about being a freelance writer. So when he heard through a colleague that the Division of Natural Sciences had hired a lecturer to teach an undergraduate science writing course, he decided to audit it.

The lecturer was Richard S. Lewis, editor of

the *Bulletin of Atomic Scientists* and formerly the city editor of the *Chicago Sun-Times*. For Wilkes, who soon became friends with Lewis, it was his first real exposure to the world of journalism.

"This was a real newspaper editor who had become a magazine editor, and he knew a lot and was willing to share it with me," Wilkes says.

Lewis only stayed for one quarter and Wilkes managed to get the job of teaching the next science writing course that spring. To a great extent, the Science Communication Program owes its existence to the students who signed up for the first science writing class Wilkes taught. They

included Pat Murphy, now head of publications for the Exploratorium in San Francisco, and Bob Stayton, now head of technical writing at the Santa Cruz-based computer company SCO.

"I was so delighted with everything that was happening in that class, I wanted to get the students out into the world and see what they could do in a professional setting," Wilkes recalls.

He managed to place several of them, including Murphy and Stayton, in internships at the California State Assembly's Office of Research in Sacramento. They

did such a great job producing reports on technical issues for the state legislators that the assembly passed a resolution honoring them. This recognition, once news of it got back to the campus, helped ensure that funding for science writing courses would continue.



ERIK STOKSTAD ('96) is editor of ScienceNOW, the online news service of Science magazine.



AVA FERGUSON ('84) and **MELISSA HUTCHINSON** ('87) are editors and exhibit developers at the Monterey Bay Aquarium.

Initially, Wilkes thought he would only teach for a couple of years while he got his own writing career off the ground. But the classes were so much fun and the students so good he kept at it. In those early years, his students included Shannon Brownlee, now a senior editor at *U.S. News and World Report*, Dan Warrick, now an editor at *Health*, and Richard Harris and Joanne Silberner, both now reporters for National Public Radio.

Then, out of the blue, Wilkes got a telephone call from the Massachusetts Institute of Technology (MIT) inviting him to apply for a tenure-track job as director of MIT's new master's degree program in science writing. Wilkes ended up spending two years at MIT before coming back to UCSC to establish the campus's own graduate program in science communication.



GEORGE WUERTHNER

GEORGE WUERTHNER ('85), on assignment with daughter Summer, is a freelance writer, photographer, and author of over 20 books, including a guide to California wilderness areas.

ing under real-world deadline pressures. Each internship also yields a handful of all-important "clips," published articles the student can show to prospective employers.

The program starts off with a crash course in the fundamentals of journalism—how to report and write news stories. The instructors are all practicing journal-



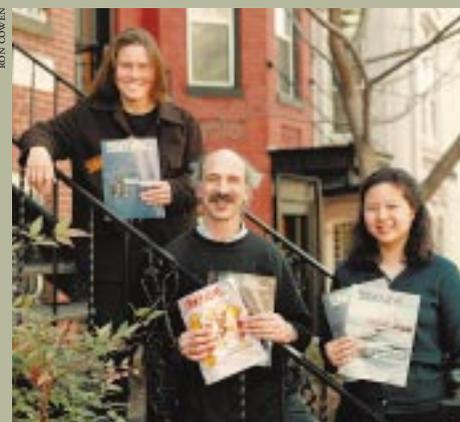
Graduates from both tracks of the Science Communication program work together on college-level educational multimedia products at Archipelago Productions in Monterey: **ANDREA FOUST** ('97), scientific illustrator and designer; **ALEJANDRO CRUZ** ('97), scientific illustrator and designer; **TRACY WASHBURN** ('97), content director and writer; **SHEILA FOSTER** ('94), content director and writer; and **CARLETON EYSTER** ('97), scientific illustrator and designer.

ists. After the first quarter the students seek part-time internships, mostly at local newspapers, and they complete the program with a full-time summer internship.

Wilkes regards science writing as a fine art as well as a craft. Every piece of student writing goes through multiple drafts and gets scrutinized by fellow students as well as by teachers. Students also learn by example, closely studying articles written by the best science writers in the business.

According to Wilkes, some editors at major newspapers remain convinced that scientists can't write and refuse to even consider his students for internships.

"We're still hitting a wall of prejudice against scientists that I vowed to break down 20 years ago, and I'm



At the weekly magazine *Science News*, **LAURA HELMUTH** ('98) is a science writing intern, **PETER WEISS** ('90) covers physics and technology, and **CORINNA WU** ('95) covers chemistry and materials science.

still beating on it," he says.

As the program's reputation keeps growing, however, that kind of attitude is steadily fading. "My students all seem to get pretty good jobs, and they even turn down jobs because they're confident they can make a living freelancing," Wilkes says.

In fact, about half of the program's graduates have chosen to work on their own as freelancers.

Wilkes's students benefit almost as much from his guidance and connections as from the training they receive. He follows their careers closely and is always available for consultation and advice, even years after they leave the program. News and job announcements are relayed to graduates via e-mail. Wilkes takes a personal interest in every one of his students, and the walls of his office are decorated



R. R. JONES

LISA DAVIS ('85) is articles editor at *Health* magazine, *San Francisco*.

with photos of former students and their children.

Between the graduates of his program and the connections he has made with other writers and editors, Wilkes sits at the center of an extensive

network reaching into every corner of the science writing world. No aspiring science writer could ask for a better resource.

Wilkes has been a staff book reviewer for the *Los Angeles Times* and has written articles for *Health*, *Psychology Today*, *Technology Review*, and other magazines. For years, however, teaching has taken precedence over his own writing. "For a while it grieved me that I didn't have more time to write, but it grieves me less now than it used to," he says.

"The fact is," he adds with a laugh, "I found my students' work more compelling than I found my own."

—TIM STEPHENS

Tim Stephens graduated from the science writing program in 1990. He joined the UCSC Public Information Office as campus science writer in 1998.

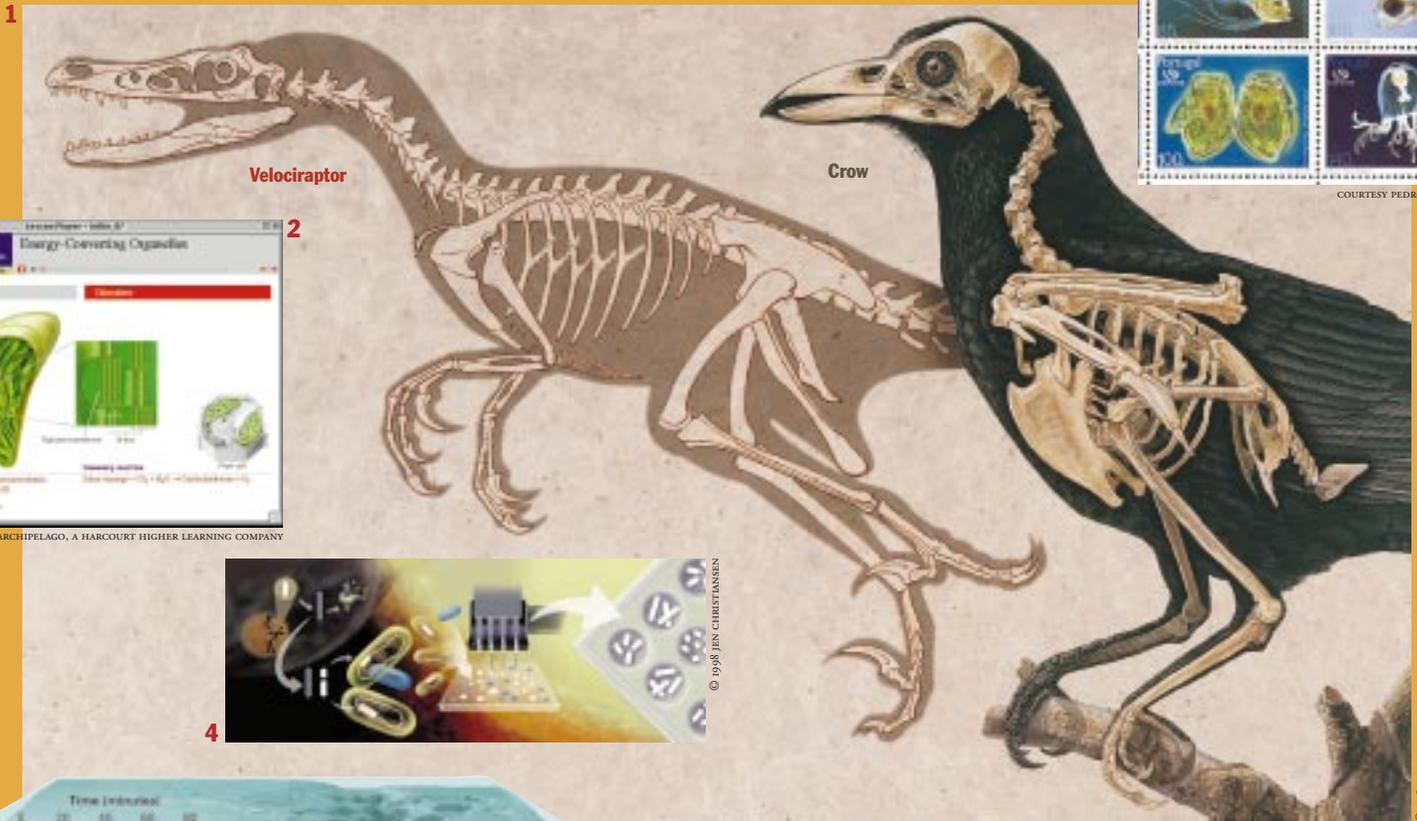
1 Portia Rollings ('96) recently illustrated a *National Geographic* article about evidence that birds descended from dinosaurs.

2 The process of photosynthesis, as illustrated by Andrea Foust ('97) in the *Archipelago Introduction to Biology*, an educational CD-ROM.

3 Illustrations of marine life by Portuguese native Pedro Salgado ('89) grace these Portuguese postage stamps.



COURTESY PEDRO SALGADO



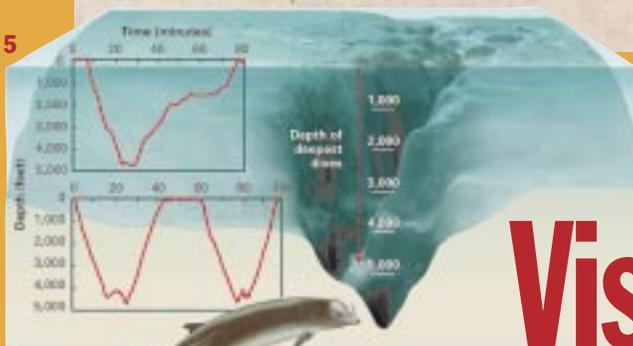
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4 Jen Christiansen ('96) depicted gene-cloning procedures for a *Scientific American* article about identifying human genes involved in disease.

5 Jen Christiansen's illustration for *National Geographic* shows bottlenose whales' remarkable diving habits as revealed by time-depth recorders.

Visualizing science

PORTIA ROLLINGS earns her living doing what she loved most as a child—drawing and working with animals. A full-time staff illustrator for the American Museum of Natural History in New York, Rollings takes photographs of specimens and produces detailed drawings for the museum's curators and for use in exhibits and museum publications. She also does freelance work, including illustrations for *National Geographic* and *Scientific American*.

UCSC's science illustration program specializes in training

artists like Rollings, who graduated in 1996. Students have come from as far away as Japan, Germany, and Portugal. Program coordinator Ann Caudle says most of the students enter the program with a degree in science and an aptitude for art.

"For many of them, art was a very big part of their lives, but they also liked science and pursued that because it seemed more practical," Caudle says.

In fact, there is a real need for illustrators with a solid grounding in science, according to Ed Bell, art director for *Scientific American*.

"There are certainly art schools preparing illustrators, but none that are preparing science illustrators in the way the UCSC program does," Bell says. "It's a big help to magazines like ours, because we don't have to give science lessons to the illustrator on each project."

About a half-dozen graduates of the program have worked for Bell as interns or on staff, and he has hired two for the position of assistant art director. He hired Jen Christiansen (class of '96) less than a month after she started her internship. In 1998, Christiansen left to become assistant art direc-

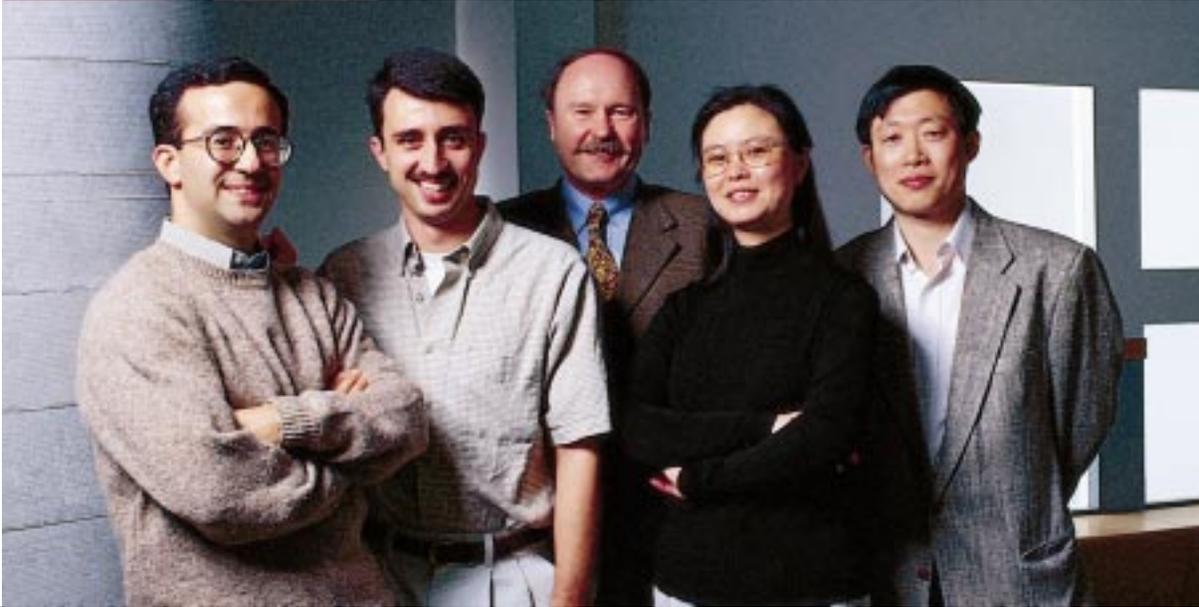
tor at *National Geographic*, and Bell hired Heidi Noland (class of '98) to take her place.

John Wilkes, director of the Science Communication Program, says he created both an illustration track and a writing track because he thought most publications were not making good use of illustrations to accompany science stories.

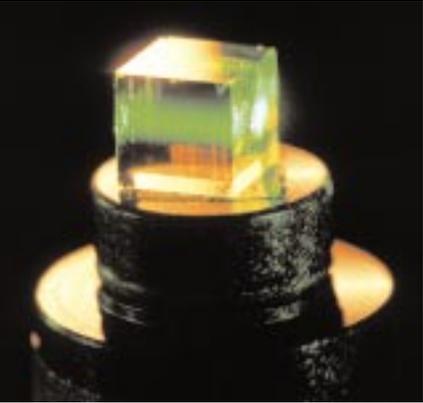
"I have always thought that a good illustration is worth its weight in diamonds and rubies," Wilkes says. "I still think there's not enough use of illustrations, but I'm pretty happy with what we're doing to remedy that."

EE

UCSC's electrical engineering program, which admitted its first class of
ago, is already on the threshold of becoming a full-fledged department,
degree programs under the guidance of a faculty on the cutting edge of



PHOTOS BY E. R. JONES



Data in 3-D: Associate Professor Claire Gu's optics research includes work on holographic data storage, which has the potential to store a terabit (125 gigabytes) of digital information per cubic centimeter. The technique uses laser beams to store data in special crystals, such as this 8mm (5/16-inch) cube of lithium niobate.

FORMAL APPROVAL IS expected from the UC Regents this summer for the Department of Electrical Engineering, making it the third department in UCSC's Jack Baskin School of Engineering along with computer science and computer engineering.

Within the broad discipline of electrical engineering (EE), the new department is focusing on electronics, communications, and instrumentation and control systems. These areas were chosen to complement UCSC's existing strengths in computer-related fields, and they are also topics of great interest to industry, says Patrick Mantey, dean of the School of Engineering.

"We are concentrating our faculty in areas we believe will be key to the future growth of industry in the Silicon Valley," Mantey says.

Five EE faculty members have been recruited, including the chair of the new department, John Vesecky. The department's plans call for a total of ten faculty members by July 2000.

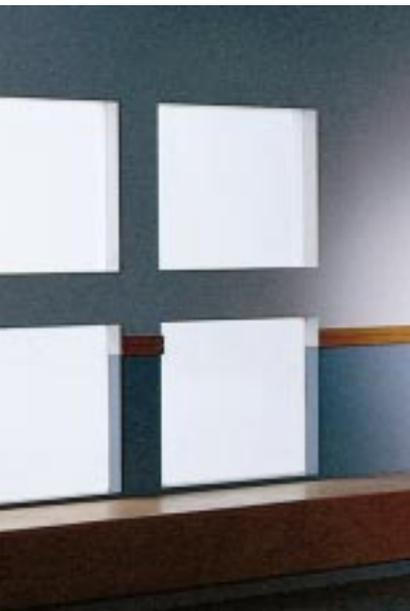
Vesecky, who comes to UCSC from the University of Michigan's College of Engineering, said starting up a new department is a great opportunity. "My goal is to create a first-rate EE department and to complement the Computer Engineering and Computer Science Departments," Vesecky says.

IN ADDITION TO THE NEW EE department, this summer marks the opening of new engineering facilities on the first floor of the Jack Baskin Engineering Building. The facilities include electrical engineering teaching labs and faculty offices surrounding an informal common space for students and faculty.

"This open area is the living room for the engineering school," Mantey says. "We've created both formal and informal spaces for people to get together, to work in teams, and to rub shoulders with their colleagues."

OPTOELECTRONICS is one area in which UCSC's EE faculty are engaged in exciting research. Optical fibers,

undergraduates less than two years
offering both undergraduate and graduate
electrical engineering research.



at UCSC

Engineering a new department: *UCSC's electrical engineering faculty are (l-r) Assistant Professor Ali Shakouri, Assistant Professor Peyman Milanfar, Professor and Department Chair John Vesecky, Associate Professor Claire Gu, and Associate Professor Jiayuan Fang.*

which use light instead of electricity to carry data, are now widely used in communication systems because of their high speed and information capacity. Building on the success of fiber optics, researchers in optoelectronics are developing new technologies that take advantage of the unique properties of light for transmitting, processing, and storing information.

"The next century will be the century of light," says Narinder Kapany, a fellow at AMP Incorporated in Palo Alto who has helped shape the optoelectronics program at UCSC. "There is a burgeoning need for optoelectronics research and development, and I believe UCSC will make significant contributions."

Associate Professor Claire Gu and Assistant Professor Ali Shakouri are both engaged in optoelectronics projects. Gu's interests include volume holographic data storage, optical fiber communications, information processing, and liquid crystal displays. She is also collaborating with researchers in the Chemistry and Physics Departments on a project to develop new polymer-based materials for fiber-optic communications.

"Our goal is to build low-cost devices that can be used to extend fiber optics into people's homes," Gu says.

Shakouri's optoelectronics research focuses on optical switching, which has the potential to greatly increase the speed of fiber-optic networks.

"We can transmit data at high speeds on optical fibers, but there is a bottleneck when you switch the signal from fiber to fiber, because currently the switching is done electronically," Shakouri says.

Shakouri also is the technical director of a project to develop new ways of cooling increasingly powerful computer chips. The collaborative project, funded by the Defense Advanced Research Projects Agency, involves researchers from UCSC, UC Santa Barbara, UC Berkeley, Harvard University, and an industrial partner, HRL Laboratories.

"As chips get smaller and faster, they generate a lot more heat. We are designing new cooling devices to integrate

Keeping the noise down: *Visualizing the electromagnetic field distribution inside an integrated-circuit chip carrier helps Associate Professor Jiayuan Fang avoid the problems of electromagnetic interference.*

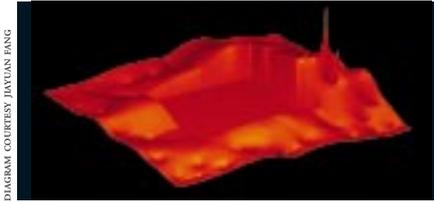


DIAGRAM COURTESY, JIAYUAN FANG

on top of the chips," Shakouri explains.

Associate Professor Jiayuan Fang is addressing another set of problems associated with the increasing speed of computer chips. An expert in electromagnetics, Fang is working on ways to avoid the interference that results from coupling or "cross-talk" between different signals in integrated circuits and on circuit boards.

"Problems with interference are more serious as micro-processor speeds get faster," says Fang, who joined the UCSC faculty in January.

Peyman Milanfar, currently at SRI International in Menlo Park, will join the new department in the fall, bringing expertise in signal processing and image processing and enhancement.

Vesecky's research, which involves the use of radar for remote sensing of ocean waves, currents, and winds, is conducted primarily on Monterey Bay and may lead to fruitful collaborations with researchers in marine sciences. Vesecky says he also sees opportunities for himself and other EE faculty to collaborate with researchers in astronomy.

"One of the things UCSC is very good at is fostering work across disciplines," Mantey notes. —TIM STEPHENS



ALL PHOTOS: MICKEY PFELEGER

It was a day for the ages. A day, in fact, for *all* ages.



ON A BLUSTERY SATURDAY in March, Wynton Marsalis and the Lincoln Center Jazz Orchestra came to Santa Cruz and performed two shows—a free afternoon workshop for more than 1,000 enraptured schoolchildren and a sold-out evening concert at which more than 2,000 jazz lovers bopped, swayed, snapped, and tapped together in the dark of the downtown Civic Auditorium.

The visit by Marsalis and the orchestra, presented by UC Santa Cruz Arts & Lectures, was the third stop on a world tour celebrating the centennial of the birth of the grandfather of jazz, Duke Ellington. The concerts by the 15-member ensemble were of a caliber

rarely seen in Santa Cruz, and the children's workshop was made possible by support from the Santa Cruz County Symphony and the Kuumbwa Jazz Center.

Artistic director Marsalis, one of the world's most talented jazz composers and trumpeters, and executive producer and director Rob Gibson have good reason for showcasing the work of Ellington. The pianist and composer's prolific career, during which he produced more than 1,500 pieces, not only spanned 50 years of jazz, but was instrumental in launching and defining many jazz idioms.

During the evening show, the orchestra traveled nearly the entire course of jazz history, playing everything from "Take the A Train," an Ellington classic; to "Lady Mac," one of Ellington's few

waltzes; to the composer's experimental adaptations of movements from Grieg's "Peer Gynt Suite."

Much in the spirit of Ellington, Wynton Marsalis (son of pianist Ellis and brother to saxophonist Branford) downplayed his presence on stage. He had his moments, of course, but so did each of the other members of this exceptional ensemble (after all, what's jazz without a few solos).

The evening crowd was dressed to the nines—the band in tuxedos, the crowd in dress coats and gowns. But hours earlier the preferred fashion ran more along the lines of jeans, sneakers, and baseball caps when area fourth and fifth graders attended the orchestra's extraordinary afternoon workshop. One of several education programs offered by Jazz at Lincoln Center (the nonprofit



until all hours of the morning,” he said. “But in those days, I wasn’t really hip to it. It wasn’t until I was older that I realized that the music made by great artists like Ellington and Louis Armstrong contains a beauty, a sophistication, and a hipness that you don’t always find in other forms of music.”

And now, as both educator and performer, Marsalis transfuses that appreciation into others. “I just want to treat these kids like my own kids, and invite them into the world of music. As long as they look back on it and remember that some man, sometime, told them something about music, that’s enough for me.”

—BARBARA MCKENNA

umbrella under which the orchestra performs), the workshop is designed to turn kids on to the magic of jazz.

Marsalis immediately endeared himself to the children when he apologized for performing a Saturday show. “A lot of the time, we do this show during the week; so I am really sorry that we’re not getting y’all out of school,” he told them.

But there were no complaints as Marsalis captivated his young audience with a witty and insightful narrative of Ellington’s life and music. As he traced the evolution of jazz from “polite society music” (“kind of boring,” he confided), through such incarnations as New Orleans jazz, swing, and improv, the orchestra demonstrated with music.

As the concert concluded, Marsalis said in a bemused tone that he had never, in 15 years of presenting kids’ programming, seen such an attentive and focused audience.

And though it was, in some ways, all about music, the afternoon workshop was about

much more. “Ellington did what he loved: He liked it, and it felt good. You can do that too. Do what you like, not what your friends are doing. Be a number one yourself, not a number two somebody else,” he told the kids.

Ironically, given the musical

dynasty he grew up in, Marsalis didn’t much like jazz as a child, which may be part of the reason the educational aspect of his work is so important to him.

“Growing up we always had jazz in the house, and my father would take us to his gigs

The afternoon workshop, Jazz for Young People, is just one of the many free programs presented by Arts & Lectures for area students. For more information on these programs, contact Arts & Lectures at (831) 459-3861 or artslecs@cats.ucsc.edu.

“I just want to treat these kids like my own kids, and invite them into the world of music. As long as they look back on it and remember that some man, sometime, told them something about music, that’s enough for me.”



The Facts of

Forensic anthropologist Alison Galloway examines skeletal remains to piece together the circumstances of death

ALISON GALLOWAY recalls the first time she saw a dead body. It was her second semester of graduate school in anthropology at the University of Arizona, and she was called to the morgue to examine the victim of a light plane crash. He was badly burned, and his skull had been shattered by the impact. It was a gruesome scene, but Galloway was riveted, driven by the task of identifying the remains.

That was 16 years and 300 bodies ago.

Now at the top of her profession, Galloway is one of only 50 highly trained forensic anthropologists in the country who are regularly called to accident and crime scenes to gather evidence. Unlike medical examiners, who work with soft tissue, Galloway was trained in physical anthropology. She examines bones for the clues that help her make critical judgments about the nitty-gritty facts of death: Who died, when, how, and where.

Though not at liberty to discuss the details of individual high-profile cases she has handled, Galloway is part of the elite corps whose members have identified victims of the Oklahoma City bombing, the crash of TWA flight 800 off the coast of Long Island, and victims of suicide bombers in Jerusalem.

An associate professor of

anthropology at UCSC, Galloway conducts research on the effects of reproduction on the skeleton, but her academic and professional interests are complementary. Her university research gives her forensic work unparalleled depth, and her fieldwork addresses a key problem: In the lab, human skeletal remains can be hard to come by, but that hasn't been the case in the field.

APURPLE BEEPER on Galloway's belt keeps her within reach of the authorities who regularly call on her services, including sheriff's deputies in Santa Cruz, Monterey, and San Benito Counties.

"Often in homicides, a criminal has tried to silence any voice the victim had," says Galloway. "We're the last chance that victim has to say what happened, and so we feel the weight of that responsibility."

At the site, Galloway uses basic archaeological techniques and tools, including shovels, picks, and a camera, to document the site and recover evidence. Every detail is examined, including clothing, insects (the presence of which can help establish the time of death), and soil, which is screened for small items like rings—and bullets.

In the lab, dental records are the most reliable tool for establishing identity. Then, by

reconstructing events such as the nature and sequence of injuries, Galloway works to re-create the final moments of a human life. The medical causes of death are numerous, but the manner of death falls into one of five categories: suicide, homicide, accidental, natural causes, and unknown, the catchall for those who take the mystery to their graves.

It's work that requires focus, an eye for detail, and a strong stomach, says Galloway, who concedes that it also helps to have a bad sense of smell. "I habituate to bad smells very quickly, so after ten seconds, I don't smell them anymore," she explains. "It's part of what allows me to do this work."

Many of the cases Galloway handles involve people living on the margins of society, including the homeless, mentally ill, drug addicts, and alcoholics. Often, their disappearances go unnoticed. "They are what we call 'the missing but not the missed,'" says Galloway.

On the other end of the spectrum are the high-profile cases that attract widespread media attention. Galloway works behind the scenes, out of view of television cameras

and beyond the reach of newspaper reporters, but she concedes that the presence of journalists can add to the pressure she already feels.

Whether at the scene of a plane crash, an automobile accident, or a grisly murder, Galloway approaches each case with the same methodical professionalism that has established her reputation. Less skilled investigators may be compelled by the "yuck factor" to rush through a job, getting the body in the bag but overlooking items or circumstances that could later prove vital.

Douglas Ubelaker, curator of physical anthropology at the Smithsonian's National Museum of Natural History in Washington, D.C., and former president of the American Board of Forensic Anthropology, says Galloway brings a unique breadth of knowledge to her work in forensics.

"Many forensic anthropologists specialize in that area, but Alison is one of relatively few who has always performed her work in the broader context of physical anthropology," said Ubelaker, who for 20 years has been the FBI's primary consul-

DEATH



“Often in homicides, a criminal has tried to silence any voice the victim had. We’re the last chance that victim has to say what happened, and so we feel the weight of that responsibility.”

tant in forensic anthropology. “That makes her work of especially high quality.”

Over the years, Galloway has taught many undergraduates who were eager to go into forensic anthropology, but she is careful about whom she encourages to pursue a career. Mystery novels and “real-

crime” television have glamorized the work, but they leave out the grueling nature of the job. The fieldwork is physically and mentally exhausting. It is followed by hours in the lab and the long process of writing a report. Lonely work that demands focused concentration, it carries with it the isolation of being the sole individual who makes the final determination. “Sometimes you feel like you’re walking out on this very narrow plank,” says Galloway.

To live with that responsibility, says Galloway, you must be driven by a keen interest and maintain your skills at a very high level, which requires handling a lot of bodies. That dedication is not for everyone. Nearly half the students who enroll in doctoral programs in forensic anthropology drop out.

And the work takes an emotional toll, too. Galloway’s cases often involve homicide, and she concedes that it can be draining to deal with such first-hand knowledge of the human capacity to inflict suffering. At the end of a long day, it is comforting to come home and hug her young daughter.

“Most of the individuals I work with have not had an easy life,” says Galloway. “I feel a responsibility to the person—not to the defense or the prosecution, but to the individual. Sometimes I wonder if I’m the only advocate they’ve ever had.” —JENNIFER McNULTY

Alumni Association Councilors, 1999–2000

Cowell

Adilah Barnes
Michael Twombly

Stevenson

Diana Reece, *Vice President for Programs*
Heather Urquhart, *Vice President for Administration*

Crown

Michael Brown
Linda Wilshusen, *President-elect*

Merrill

Alan Acosta
Dominador Siababa

Porter

Daren Lewis
Linda Ziskin

Kresge

Douglas Foster
Richard C. Hall

Oakes

Renée Martínez
Eric D. Thomas

College Eight

Joanne Foxxe
Robert Weiner, *President*

At Large

Mark Adams
Ken Doctor
Dorothy Gustafson
John Laird, *Vice President for Finance*
Sandor Nagyszalanczy
Kathryn Tobisch, *Vice President for Membership*
Pat Walker

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Kami Chisholm, *President, Graduate Student Association*
Carolyn Christopherson, *Executive Director*
Michael Cowan, *Past Chair, Academic Senate*
M.R.C. Greenwood, *Chancellor*
Stephen Klein, *Past-President*
Kirti Srivastava, *Chair, Student Union Assembly*



Old friends Judy Einzig and Michael Stusser (both Cowell '69) were delighted to find one another amid the record crowd of 350 guests at the April all-alumni reunion luncheon. Einzig was a member of an outstanding team of pioneer alumni volunteers who put on a memorable 30-year reunion.

Alumni invited to plan reunions

ALUMNI WHO WILL celebrate 5-, 10-, 15-, 20-, 25-, and 30-year reunions in 2000 are invited to step forward now to begin event planning. The Alumni Association's all-alumni reunion luncheon, set for Saturday, April 15, 2000, will give special recognition to the classes of '70, '75, '80, '85, '90, and '95. Alumni volunteers will need to come forward to put together additional activities, such as the traditional reunion dinner and dance.

It takes only a handful of volunteers to put on a reunion. In 1999, just ten committed volunteers planned and coordinated an entire weekend of reunion events.

With Alumni Association assistance, reunion planning can take just a few meetings. E-mail access and Web skills are a plus.

To volunteer or for more information, contact the Alumni Association via phone toll-free at (800) 933-SLUG, locally at (831) 459-2530, or via e-mail at alumni@cats.ucsc.edu.

New alumni directory in the works

WHEN YOU TOOK theater arts classes with Camryn Manheim (Porter '84), could you tell she was bound for Hollywood success? When Geoffrey Marcy (Ph.D. '82, astrophysics) was your astronomy TA, did you expect to read front-page news about his discoveries of planets that orbit sunlike stars?

Find out what your lost friends and classmates are doing these days (and let them know what you're up to) by participating in the UCSC Alumni Association's directory project. The alumni directory will list updated alumni residence and e-mail addresses as well as information about careers and family.

A request for updated information (or, for those who've recently contacted UCSC, an information confirmation) will be sent to all alumni later in 1999, along with an invitation to order a directory.

For more information, call the Alumni Office toll-free at (800) 933-SLUG or locally at (831) 459-2530.

African American alumni build a reunion

PLANS ARE UNDER WAY for UCSC's first African American alumni reunion.

The event will take place on Saturday, April 15, 2000, as part of the Banana Slug Spring Fair campus open house.

Members of the reunion planning committee include Los Angeles actress Adilah Barnes (Cowell '72); Oakland dentist Carol Bradshaw (Oakes '83, community studies); Paula Powell (Graduate Studies '89, history), director of UCSC's African American Student Life Resource and Cultural Center; Sacramento public finance expert Eric Thomas (Oakes '84, economics); as well as other interested graduates. Their efforts will be aided by staff from the Alumni Association.

"Though many of us African American alumni have talked about a reunion over the years, year 2000 feels right to 'just do it,'" says Barnes. "We welcome all who would like to join us: those from the very beginning up until those who just graduated last year. Herman Blake [Oakes founding provost] plans to come; that will allow us to really come full circle with the very beginning of UCSC."

The committee's first step is to build a mailing list of all African American alumni. Those who graduated before 1986 (before some electronic records were available) are strongly encouraged to contact the Alumni Association now to get on the mailing list. Comments, suggestions, and offers to assist with reunion planning are also welcome. The association can be reached by phone toll-free at (800) 933-SLUG, locally at (831) 459-2530, or via e-mail at alumni@cats.ucsc.edu.

Vintners support scholarships

LISTED BELOW ARE PARTICIPANTS in the 1998 UCSC Alumni Vintners Wine Tasting. Since the wine tasting began in 1989, this popular event has raised over \$18,000 for undergraduate scholarships. You can thank these vintners for their generosity by remembering these names when you make your wine purchases.

The 1999 Alumni Vintners Wine Tasting will be held on Saturday, July 31, at UCSC. For more information, contact the Alumni Association by phone toll-free at (800) 933-SLUG, locally at (831) 459-2530, or via e-mail at alumni@cats.ucsc.edu.

Ahlgren Vineyard

Alice Kelly (Kresge '92)

Bargetto Winery

Susan Leach (Cowell '92)

Bonny Doon Vineyard

Randall Graham (attended UCSC in the early '70s)

Domaine Chandon

Dawnine Dyer (Oakes '74)

Frey Vineyards

Paul Frey Jr. (attended UCSC in the '80s); Karla Frey (College Eight '86)

Glen Ellen Winery

Jeff Booth (College Eight '79)

Husch Vineyards

Richard A. Robinson (Crown '71)

Madroña Vineyards

Hugh Chappelle (College Eight '86)

McHenry Vineyard

Henry and Linda McHenry (son and daughter-in-law of the late Dean McHenry, founding chancellor)

Mirassou Winery and Radcliffe Cellars

Thomas Stutz (Cowell '74)

Patz and Hall Wine Company

Anne Therese Moses (Crown '85)

Pelican Ranch Winery

Phillip Crews (professor of chemistry, UCSC)

Roudon-Smith Winery

Michael Walters (Porter '93)

Saintsbury

David Graves (Crown '74)

Stag's Leap Wine Cellars

Brooks Painter (Kresge '80)

Storrs Winery

Jason Brandt Lewis (Stevenson '78)

Sylvester Winery

Dominic Martin (Kresge '73)

Zayante

Gregory Nolten (Crown '73)



DOON HARRIS

ALUMNI SCHOLARSHIP WINNERS: Ten undergraduates received \$2,500 scholarships in 1998-99 funded by the Alumni Association. They are, back row (l-r), Christopher Pratorius (Porter, music), Nancy Redwine (Kresge, literature), Amy Post (Stevenson, business management/economics), and Ester Anderson (Stevenson, art); front row (l-r), Ian Cuevas (Porter, psychology), Maria Ramos (Merrill, undeclared), Jeanette Dowell (Oakes, biology), Selina Hunstiger (College Eight, undeclared), and Gilbert Quintana (Kresge, math). Not pictured is Jenny Tang (College Eight, sociology), who spent the 1998-99 academic year studying in China. Twelve financially needy students will receive awards from the Alumni Association Scholarship Fund in 1999-2000.



DAVID ALEXANDER

Anne Therese Moses, left, owner of Patz and Hall Wine Company, gets ready to sample a competitor's wares as Madroña vineyards wine maker Hugh Chappelle fills her glass at the 1998 UCSC Alumni Vintners Wine Tasting. Alumni council members Sandor Nagyszalanczy (Stevenson '77), second from left, and Douglas Foster (Kresge '76) look on. Over 250 fellow alumni, friends, and UCSC community members attended the tasting.

*The University of California
Alumni Associations present the...*

Sixth Annual UC Alumni Career Conference

☛ KEYNOTE SPEAKERS:

Terry Paulson: "Making Change Work"

Jenny Prisk: "Stand Up, Speak Up, and Succeed"

☛ Career workshops

☛ Networking luncheon with alumni in your job field

Saturday, September 18, 1999

9 A.M. to 3 P.M.

At the Westin Bonaventure Hotel

in downtown Los Angeles

COST (INCLUDES LUNCH):

\$45 Alumni Association members

\$60 Nonmembers

For more information or to register,
contact the UCSC Alumni Association:

(800) 933-SLUG

alumni@cats.ucsc.edu

ALUMNI NOTES

Cowell College

'67 Michael FARNEY has been named the Philip G. Laurson Professor of Mathematics and promoted to full professor at Dakota Wesleyan University in Mitchell, S. Dak.

'68 Ellen SCHIFF has been a nuclear medicine technologist at Sonoma Valley Hospital since 1976; she has a black belt in Shito-Ryu karate, a second kyu in Bo-Okinawan kobudo, and she is an assistant karate instructor.

'73 After seven years living in Hong Kong and working as regional managing director of a personal and organizational effectiveness training company, Mitchell FEIGENBERG and his family are returning to northern California this July; he would love to hear from old classmates at mfeigenberg@compuserve.com.

David HOVLAND has worked for 25 years in the fields of geology and environmental geology and is now manager of Idaho's Drinking Water Program.

'76 In summer 1998, Richard LEITER was promoted to full professor of law and appointed associate dean for Information and Technology Services at Howard University School of Law; his book, *Concordance of Federal Legislation*, was published by William S. Hein Co. in 1998.

'77 Rita ROSENKRANZ runs the Rita Rosenkranz Literary Agency in New York City; she has worked with alumna Patricia HALL (see Stevenson '70) on five books.

'80 Scott ENGLER spent the summer of 1998 in Poland visiting relatives with his wife, Zuza; they have moved recently to Petaluma, Calif., and Scott can be

reached at scotte@aol.com.

'82 Karen LINICK and Vince ROMERO (Cowell '84) are married, and their son, Evan Romero, was born in October 1998. Vince is teaching high school social studies and coaching the academic team and varsity basketball; Karen is a full-time mom trying to figure out how to supplement their income without having to be away from home 11 hours a day.

'84 After finishing a residency in family medicine at the University of North Carolina at Chapel Hill in 1995, William (Sandy) CRAIG joined the UNC Medical School faculty; did medical work in Malaysian Borneo with his wife, anthropologist Kirsten Edey; and is working now as a family doctor at a rural health center in Vermont.

'85 Karen NEWBRUN Einstein teaches English as a second language at Santa Rosa Junior College; she is living in cohousing in Sebastopol, Calif., and is the proud mother of four-year-old twins, Koby and Elsa.

'88 Jennifer HATHORNE is working in Salt Lake City as a development associate for the Sundance Institute, raising money for the Sundance Film Festival and the Theatre Program.

'91 Elisa GORDON completed her Ph.D. in anthropology at Case Western Reserve University in Cleveland and is now working as a research associate in the Department of Medicine at the University of Chicago. Rachel MARTIN, a senior financial auditor at Barclays Global Investors in San Francisco, began an evening M.B.A. program at the Haas School of Business at UC Berkeley in fall 1998. Michael SMITH has recently finished his

Ph.D. in environmental and community sociology at Utah State University and feels fortunate to have landed a tenure-track assistant professor position in natural resources planning at Humboldt State University in Arcata, Calif. "He is happy to be back living and working in a place where there are redwoods surrounding campus buildings and banana slugs prowling the sidewalks."

'92 After spending two and a half years in Nairobi with the Peace Corps and subsequent stays in Argentina and Spain, Christopher MONDAY is in St. Petersburg, Russia, working on a master's degree in economics.

Jane Parks-McKAY is a reporter for the Times Publishing Group's family of newspapers; she is at work on her third book and "credits her UCSC education for her current activities."

'93 Sara DANIELSEN is finishing her master's in theater from UC Santa Barbara and has relocated to San Francisco with Amanda WYLIE (Cowell '94).

'95 Eric LIPTON is working in Washington, D.C., for the Tribune Company doing production and reporting for the various Tribune television stations, Internet sites, and newspapers, including the *Chicago Tribune*, KTLA-TV in Los Angeles, WPIX-TV in New York, and their Web sites. Marine Lance Cpl. Charles McEWEN is currently deployed to the western Pacific Ocean, Indian Ocean, and Arabian Gulf with the 15th Marine Expeditionary Ready Group.

'96 Bruce ROCKWELL won the Jim Highsmith Competition for Composition from the San Francisco Conservatory of Music

for his piece, "Fire Signs"; the piece was performed in January by the San Francisco Conservatory Orchestra with Jung-Ho PAK (Cowell '85) conducting.

'97 After serving in the Peace Corps in Eritrea, East Africa, Betty DEPPS is now teaching English at a high school in Japan.

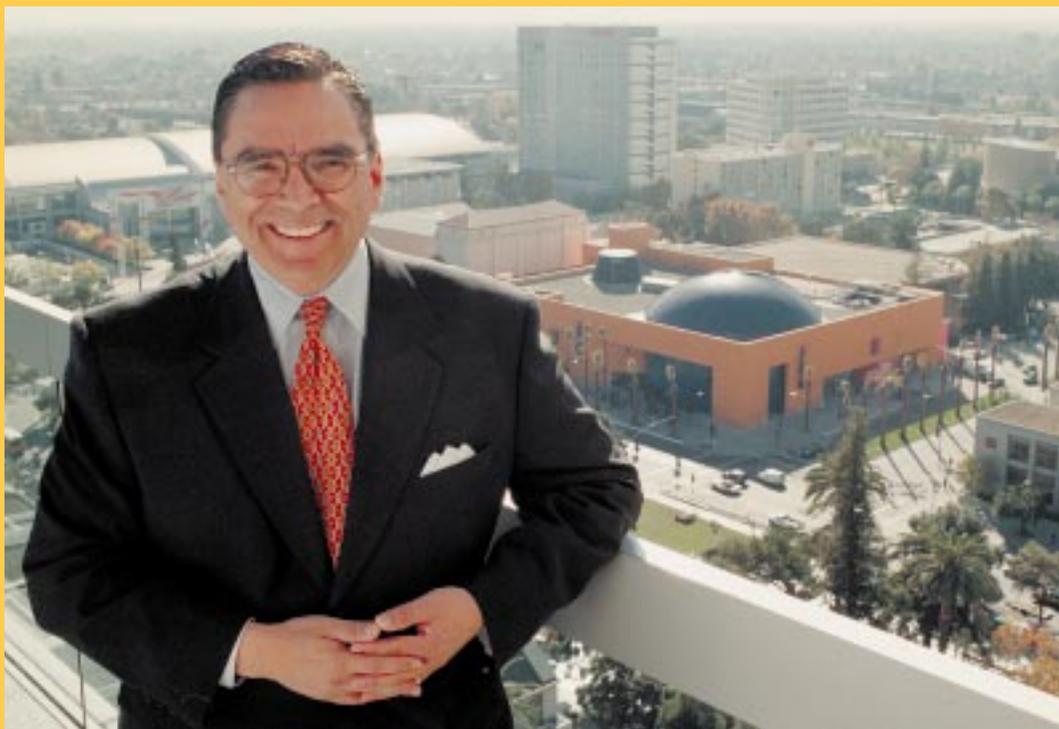
'98 Neal HARTLEY was voted best teacher for 1998-99 at the high school in Saitama, Japan, where he is teaching English. When asked about his most influential teacher, he answers, Dane Archer, from whom he took classes on sociological methods and nonverbal communication.

Stevenson College

'69 Diane COHAN was awarded a license in marriage and family therapy from the California Board of Behavioral Sciences in 1998; she has been a licensed private investigator for 17 years.

'70 Patricia HALL is the author of *Johnny Gruelle, Creator of Raggedy Ann and Andy: The Definitive Biography of America's Premier Juvenile Entertainer* (1993) and the *Raggedy Ann and Andy Postcard Book* (1998).

'71 Charles (Chuck) BURTON has moved with his wife and daughter to Steilacoom, Wash., where he is a seasonal tax preparer. He also hikes and bikes and has won nine major tournament bridge titles in the last several years. Jonathan KIRSCH is the author of two best-selling books on the Bible and two books on publishing law; he is also a contributing writer to the *Los Angeles Times Book Review* and a book critic for National Public Radio



Leading the way in San Jose

Alumnus Ron Gonzales (B.A. community studies, Kresge '73) is halfway through his first year as mayor of San Jose

THE THIRD-LARGEST CITY in California and the 11th largest in the nation, San Jose is considered by many to be the capital of the high-octane, high-tech mecca known as Silicon Valley.

As mayor of such a dynamic city, Ron Gonzales frequently arrives home very late at night, feeling like he's been through the spin cycle of a washing machine. Undaunted, Gonzales calls the job he's held since January the most incredible he's ever had.

"It has surpassed my expectations," he says. "It's going to sound a little bit like a campaign slogan, but I really do believe I've got the best job in the best city in the nation at the best possible time. It's certainly

the kind of job where you are never bored. No day is like the day before."

On a daily basis, Gonzales grapples with a range of issues: reshaping city government to promote teamwork and efficiency, stoking the economic engine that powers San Jose, balancing economic and environmental concerns, and supporting schools as they educate tomorrow's workforce.

"The bottom-line responsibility of any city is to make sure we're doing our job providing the infrastructure that fuels the industries that keep our people working," says Gonzales. "It takes a lot of cooperation and partnership and is not always easy."

Educated in Sunnyvale's public schools, Gonzales came to UC Santa Cruz in 1971 as a junior transfer student from De Anza College in Cupertino. A community studies major at UCSC, Gonzales got his first

experience in government while fulfilling a field-study requirement. During the spring and summer of his junior year, he worked for the Equal Employment Opportunity Commission (EEOC) in Washington, D.C.

It was an exciting time to be in Washington and at the EEOC: The capital was abuzz with Watergate, and the EEOC had just received the power to sue employers directly for discrimination. Gonzales, who had never before traveled outside California, called his field study a "tremendous personal learning experience."

After graduating in 1973—the first in his family to earn a college degree—Gonzales worked for two years on a community schools program in Sunnyvale before taking a job in the city of Santa Clara's planning department. Four years later, he joined Hewlett-Packard, where he worked in personnel and marketing.

At about the same time, Gonzales launched his political career. In 1977, he lost a race

for a seat on the Sunnyvale City Council, but won on his second try two years later. He served as mayor of Sunnyvale for two terms before being elected to the Santa Clara County Board of Supervisors in 1988.

During his campaign for mayor of San Jose, Gonzales made education his No. 1 issue. While the mayor has no direct responsibility for schools, Gonzales maintains that mayors can take both concrete and symbolic steps to help schools improve.

In the first few months of his term, Gonzales began making good on his campaign pledge, launching a program to help new San Jose teachers repay portions of their college loans. In another effort to help the city attract and retain teachers, his administration is providing resources to help teachers buy their first homes in San Jose, where skyrocketing housing prices make home ownership difficult on a teacher's salary. Gonzales is also aware of the value of simply keeping educational reform in the forefront of discussion.

"We need to do everything we possibly can to help children realize their dreams, whether it's to be a software engineer, a schoolteacher, a journalist, or even a mayor," Gonzales says. "I want every child in San Jose to know that this mayor is standing behind them, working with the teachers in their schools, the principals of the schools, the superintendents of the school districts."

As a Hispanic mayor of a major city, Gonzales is frequently mentioned as one of California's brightest political stars. The mayor, however, says the future is not his focus. "I'm thinking about this job," he explains. "If I do this job really, really well, that will be satisfying enough." —FRANCINE TYLER

affiliate KPCC-FM in southern California. Kirsch practices law in the field of publishing and intellectual property as a partner in the firm Kirsch & Mitchell. His wife, **Ann BENJAMIN Kirsch** (Porter '71), is a psychotherapist in private practice in Beverly Hills. **Jeanette PETERSON Natcher** is teaching K–12 students in an English Language Development program in Lone Pine, Calif.; she has been involved in bilingual education since 1973 and received her M.A. in bilingual crosscultural special education in 1987 from San Jose State University. She added the following comment on the article on Adilah Barnes in the last *UCSC Review*: “Herman Blake had a profound influence on my career and interest in my own heritage, as did Murray Baumgarten and Norman O. Brown.” **Nina SUNTZEFF Zagaris** is working in the Development Department at the Jewish Museum in San Francisco and finishing her M.A. in museum studies at John F. Kennedy University in Orinda, Calif.; she is president of the Board of Directors of the Modesto Sister Cities International. **'72 Judy BERGER** directs new leadership development initiatives for Health Forum, a subsidiary of the American Hospital Association, based in San Francisco. **'73 Robert BROOKS** is working with a police department in a juvenile-delinquency prevention program, teaching criminal justice at a local university, and working his 40-acre farm in his spare time. **Christine ABRAHAMSON McClelland** holds leadership positions in a local NAMI (National Alliance for the Mentally Ill) group, providing companionship and education for people affected by mental illness. **'77 Dori BARNETT** is a school

psychologist at three schools in the Brea Olinda Unified School District; she was recently awarded a human services recognition for her work as a school psychologist and conflict management program coordinator. **Sharon HAYS**, an assistant professor of sociology and women's studies at the University of Virginia, has written a book about the contemporary ideology of “intensive mothering” and the unrealistic expectations of mothers, titled *The Cultural Contradictions of Motherhood* (Yale University Press, 1998). **'83 Beverly CRAIR** has joined Sun Microsystems in Menlo Park as manager of the NFS (network file system) development team. **'84 Diane KERN Hamilton's** business won the Telstra and government Small Business Award for the southwest of Australia in 1997 and the Telstra Internet Innovation Award in 1998; in her free time, Diane is an active member of the local theater group and a Cub Scout leader. **'85** After graduating from the University of Montana Law School in 1988, **Andrew SUENRAM** is living and practicing law in the “last best place”—Dillon, Mont.; he is married and has two daughters. **'87 Lance BERNARD** is teaching U.S. history at the University of Nevada at Reno and finishing his Ph.D. in history. **Chuck FLACKS** changed careers in 1998 and is now working in market research. **Eric MENDELSON** writes, “the years I've spent on my mountain bike in the uphill battle against gravity have paid off with a lifetime achievement award from the Flummoxed by Physics Society.” **'89 Michael Norman MANN** has written a musical theater production, titled *Cumberland Blues*, which tells the story of a disintegrating Appalachian mining fami-

ly in the 1940s and features classic songs from the Grateful Dead; the play ran at the Stage Door Theater in San Francisco in summer 1998. **'91 Kim BEA** is in the first year of a master's program in history at the University of Minnesota at Minneapolis St. Paul. **Dana CADILLI Linnet** returned to the U.S. after six years of corporate life, graduate study, and public service in Denmark; she is now president and founder of ICON-International Consultants in Boston. **Julie SEVRENS** has been appointed to the position of health and fitness writer at the *San Jose Mercury News*. **'92 Marcia WALL** is teaching English at the University of San Diego. **Timothy WEINER** is a second-year law student at Southwestern University School of Law in Los Angeles; this summer he is clerking for a Superior Court judge in Los Angeles County. **'93 Carolyn LEEDY** received her M.D. from Northwestern University Medical School in 1998; she is presently a resident in pediatrics at Children's National Medical Center in Washington, D.C. **'96 Jolene ALLRED** is serving with the Peace Corps in Jamaica, working with the National Resources Protection Authority on improving water quality and maintaining freshwater resources. **Mai BLOOMFIELD** is practicing graphic design in southern California and pursuing her love of music as vocal and guitar lead in an all-women band called Raining Jane. After moving to Portland, Ore., as an AmeriCorps member, **Renée SANCHEZ** is now working as a tenant organizer. **'97 Sarah RUSSELL** is in her first year of medical school at UC San Diego School of Medicine.

'98 Andrea VAN NOTE is pursuing an M.S. in counseling at San Francisco State University; she has recently become engaged and “already misses UCSC.”

Crown College

'69 Jack OTIS took a year off from the printing business to participate in the Expo 98 Round the World Rally, in which he sailed over 20,000 downwind miles in 358 days on a Nelson Merick 68 “Maverick.” The trip took him across three oceans and four seas and to four continents and over 20 islands. **'71 Deborah KAPLAN** is executive director of the World Institute on Disability in Oakland. **Kathy BENDER Koch** is working as a clinical laboratory scientist in cancer research at the University Medical Center in Göttingen, Germany. **'73** After working for 20 years in Sacramento drafting education legislation, **Rick SIMPSON** has joined Governor Gray Davis's team as educational liaison to the legislature. **'83 Aviation Week and Space Technology** magazine awarded **Larry CORNMAN**, a researcher at the National Center for Atmospheric Research in Boulder, Colo., one of its annual laurels for his lead role in developing a new method of measuring atmospheric turbulence from commercial aircraft. **'84 Lisa SIEVERTS** is still living in Boise, Idaho, with the goats and chickens. **'86 Jennifer BUNDY Koenigs** is hiking in the desert, taking ballet and piano lessons, and camping with her family; she is involved with Cub Scouting, and she's a soccer mom. **'89 Nick KOPSINIS** completed his master's in education at

Chapman University and is now in his tenth year of teaching at a middle school.

'90 **Jason HOFFMAN** is working for Wells Fargo in information security; he plans to enter an M.B.A. program at St. Mary's College this summer.

'91 **Damian BIONDO** is halfway through a J.D. program at Georgetown University and is contemplating a career as an art lawyer.

'92 **Amanda SARGENT** received her master's degree in social work in 1998 at USC and recently moved back to Santa Cruz.

'93 **Karen Lara ACKERMANN** completed a master's degree in marine biology at the College of William and Mary in Williamsburg, Va., in January. **Gary LISKA**

was chosen new associate of the year for John Hancock Financial Services in 1995 and 1996; in 1997, he started his own registered investment advisory firm, SEIA.

After receiving her M.S.W. from Loma Linda University in 1997, **Susan RITTER** is now living on the Mendocino coast and working as a social worker for Child Protective Services.

'94 **Henry DAVIS** is graduating from the University of Nevada Medical School and moving, with his wife, **Lucy ROBBINS Davis** (Porter '94), and their three children, to Tacoma, Wash., where he will begin a residency in family medicine.

'96 **Virginia Anne YOUNG** was expecting to graduate from Boalt Hall School of Law at UC Berkeley in May.

'98 Through his involvement with the Cabrillo College Archaeological Program, **Matthew ARMSTRONG** was part of a team that uncovered an ancient Native American site in Monterey County during a routine survey of land in Los Padres

National Forest; he also assisted in an excavation of an original Spanish cathedral at the San Francisco Presidio.

Merrill College

'71 After 17 years living in Israel, where she worked as a teacher and an editor, **Joan** (now **Yael**) **MILIMAN Gott** is living in Bellingham, Wash., with the younger of her two daughters; she is enrolled in a program for clinical pastoral education and is working as a hospital chaplain intern.

'76 **Bernard GOLDEN** has been named vice president of engineering at Deploy Solutions, a company specializing in workforce management software.

'79 **Peter COLE** is a social worker in private practice in Sacramento and a clinical instructor of psychiatry at UC Davis School of Medicine; he lives with his wife, Daisy, and their blended family of five kids in Fair Oaks, Calif.

'83 **Deidre WILLETTE Paknad** and her husband, **Mohammad PAKNAD** (Crown '85), live in Palo Alto with their five-year-old daughter, Azora, and are co-founders of a Silicon Valley start-up company, Glyphica. Deidre and Glyphica were recently inducted into the Smithsonian Institution's National Museum of American History for the company's work in preserving historical Olympic documents on the Internet.

'85 **Persis KARIM** received her Ph.D. in comparative literature from the University of Texas at Austin in 1998 and will take a position as an assistant professor at San Jose State this fall; she is coeditor of *A World Between: Poems, Short Stories and Essays by Iranian Americans*, published in

April by George Braziller.

'86 **Juan RAMIREZ** has had his book *A Patriot After All: The Story of a Chicano Vietnam Vet*—which began as his undergraduate thesis—published by the University of New Mexico Press; he owns a landscaping business in Watsonville.

'89 **Michelle ANDERSON** is a professor of law at Villanova University School of Law.

Jonathan KLEIN is a partner at the 14-attorney law firm of Kelly, Herlihy, Advani & Klein in San Francisco; he has a new baby girl named Rachel. **John PEREIRA** and his wife, Anne Riddell, were expecting their first child in fall 1998; they have relocated to Mexico City, where he represents Bechtel in the Latin America northern region in the area of human resources. He asks "moat rats" to contact him at merrillslug@mailexcite.com.

'90 **Carolyn CHERRY** is doing special education monitoring and compliance in the Minneapolis schools; she would like friends and classmates to write her at cjcblossom@aol.com.

'91 **Debra SCHMIDT** is living and working in the San Diego area and teaching ESL in Baja California, Mexico.

'92 **Kate SULLIVAN** lives in Minneapolis and is a pop music critic at the *St. Paul Pioneer Press*, as well as a theater critic for *American Theater Magazine* and an arts reporter for *City Pages* weekly newspaper.

'94 **Linda MIKLOSKO** is an editor of research publications and the Web development manager for the Wood Materials and Engineering Laboratory at Washington State University; she and her son, Aaron, live in Moscow, Idaho.

Porter College

'72 **Diane KOMINICK Ouzoonian** is working as an art teacher for prekindergarten through 12th-grade students at a Christian school in New York; she is in a master's program at SUNY and has been involved in missionary work in the Philippines.

'74 In spring 1998, **Lisa JENSEN Aschbacher** had her first novel published in Germany, and she and her husband, artist James Aschbacher, painted a mural in downtown Santa Cruz; this year she celebrates 23 years as film critic for the *Good Times*, 14 years as a book critic for the *San Francisco Chronicle*, and 20 years of marriage. **Noe LOZANO** is enjoying working at Stanford but misses UCSC; he has one daughter at Stanford, one applying to UCSC, and two boys still too young for college. **Teresa McNEIL MacLean** teaches colored-pencil drawing, writing and performing poetry, and "music of the westward expansion" in Santa Ynez, Calif., area schools; she had a one-person show of her drawings and watercolors in February at the Faulkner East Gallery in Santa Barbara.

'77 **B. J. BAUER Glowacki** is working toward an M.A. in special education and a concurrent CLAD and special education credential at National University.

Laura MORRELL Marelllo has written four novels, a collection of stories, and a collection of novellas; she teaches at the State University of New York at Albany.

'78 **Steven PEÑA** recently left Warner Bros. Online to become counsel in the L.A. office of Brown, Raysman, Millstein, Felder & Steiner; he's still working on entertainment matters, including Internet issues.

'79 Singer and songwriter **Carraig DE FOREST** has a new

album titled *El Camino Real*.

'80 **Kathryn CHETKOVICH**'s collection of short stories about women and their friendships, titled *Friendly Fire*, was the 1998 winner of the John Simmons Short Fiction Award, a national juried award through the Iowa Writers' Workshop. **Jennifer COLBY** is the owner of Galeria Tonantzin, which shows women's contemporary art in San Juan Bautista, Calif.; she teaches in various colleges and is pursuing a Ph.D. at the California Institute of Integral Studies.

'84 In September 1998, **Camryn MANHEIM** won an Emmy for Outstanding Supporting Actress in a Drama Series for her role as attorney Ellenor Frutt on ABC's *The Practice*. She has had feature roles in a number of films as well, including *Romy and Michelle's High School Reunion*, *Mercury Rising*, *Happiness*, and *David Searching*.

'85 **Mattison FITZGERALD**'s paintings are on an animated film on the Internet, which was screened at the Cannes Film Festival; her work is archived in the National Museum of Women in Arts.

'90 **Michael DILLON** lives and teaches in lovely Venice, Calif. After graduating from the University of La Verne Law School in 1998 with his J.D. and passing the California Bar, **Marc GROSSMAN** has opened a law office in Upland, Calif., and is building a practice, hoping to specialize in consumer and class-action matters. Folksinger/songwriter **Gillian WELCH**'s second album, *Hell Among the Yearlings*, was released in 1998; her first album, *Revival* (1996), was nominated for a Grammy.

'91 **Andrew EHRNSTEIN** earned the Top Gun Award for business growth in 1998 within the Lynden Air Freight system; he and his wife, Cynthia, bought a house

with studio space for them both.

'92 **Susannah COPI** received her M.F.A. in film production from CalArts; she is currently teaching film classes at the Academy of Art College in San Francisco. **John FOWLER** is serving as a Peace Corps volunteer in Kenya, teaching basic fundamentals of biology and chemistry to high school students.

'93 **Alexis Lynne PAVENICK** earned an M.Phil. in anthropology from Cambridge University in England and a master's in English from Cal Poly, Pomona; she married Alex Tennant, a mechanical engineer, in 1997.

'95 **Monica CREASON de la Garza** is a research assistant at the L. A. County Natural History Museum and is working toward an M.A. in art history and museum studies; she recently married Jaime de la Garza.

'96 After serving in the Peace Corps, **William KTSANES** is now director of an organization caring for HIV-positive children in Thailand, and he is proud to announce the birth and adoption of his son, Thomas, a Thai child orphaned by AIDS.

Kresge College

'75 **Dana Andersen-WYMAN** is head of drama at Brazosport College in Lake Jackson, Tex.

'76 **Gael PERRIN** is happily living in Novato, Calif., with her husband and considering the options for graduate school.

'79 Navy Chief Petty Officer **Elsa FRIEDMAN Conely** was one of more than 5,000 sailors and marines aboard the USS *John C. Stennis* who recently spent a record 131 days in the Arabian Gulf helping to enforce mandates levied against Iraq after the 1991 Gulf War.

'83 **Kevin ERGIL** is director of

research at the New York College in Syosset, N.Y.; he is conducting research in alternative and complementary medicine.

'84 **Jim SCHWEITZER** is president of the Yorba Linda Lions Club, as well as secretary of the North Orange Region of District 4-L4 Lions Club in Orange County, Calif.; he is also secretary of the Brea Historical Society.

'88 **Daphne BROGDON** is cohost of *CNET Central*, a show on computer gadgets on the USA/Sci-Fi networks and producer and call screener for Dr. Dean Edell's KGO radio show; she is also a cocreator and performer with an improv group called Scratch Theater.

'89 **Carl DURHAM** left the position of vice president of a Santa Cruz company to return to the Bay Area and practice law in San Jose. **Christine JOHNSON-Staub** has a 14-month-old son, Benjamin, and she has recently begun a position as director of research and public policy for Associated Day Care Services in Boston.

'92 **Elena AGUILAR** is in a Ph.D. program in anthropology at UC Berkeley; she married the love of her life in 1998. **Jonathan BENAK** is currently on a preceptorship in the emergency room at Washington, D.C., General Hospital as a second-year physician's assistant student; he expects to graduate from the MCP Hahnemann University Physician Assistant Program in August.

'94 **Michelle SHIN** graduated from Hastings College of Law with a J.D. in 1998.

'95 **Shelley BATES** sold her first novella, titled "Strictly Business," which will be published by Red Sage this summer. After graduating from McGeorge School of Law, **Robert SCHMITT** is working as associate city attorney for the city of Roseville, Calif.

'96 **Cassandra MOONEY** taught English in Spain for two years; now she is doing research on women photographers.

'98 **Angela THOMPSON** is currently working for the Santa Rosa *Press Democrat* and is searching for a good graduate program in journalism.

Oakes College

'76 **Denise SEGURA** is a sociologist at UC Santa Barbara, and she directs the university's Center for Chicano Studies.

'80 **Tamara NICHOLS** is a licensed marriage and family therapist working with seriously emotionally disturbed (SED) adolescents and with perpetrators of domestic violence.

'81 **Christoph RUBACH** is an actor in an experimental English dance company that has been touring throughout Europe with a production relating to the Holocaust.

'90 **Paul BUSE** is a tax preparer with Mission Financial Services, and he owns his own bookkeeping firm; he and his wife, Suzanne Barreras, live in Santa Cruz and have a daughter, Caitlin Jane, born in 1998. **Barry HAINES** was made an officer of General Reinsurance Corporation in 1998.

'92 **Catherine PFISTER** completed her M.S.W. at San Francisco State University in 1998 and is now working with disabled children in San Mateo County. She and her "compañero," Jonathan, live in San Francisco and are planning a trip around the world.

'93 After receiving an M.S.W. from Boston College Graduate School of Social Work in 1997, **Sherie FULLER Smith** is teaching health in a middle school. **Matthew RAHMAN** has been

awarded a Ph.D. in neuroscience from the F. Edward Hebert School of Medicine at the Uniformed Services University of the Health Sciences; he is currently engaged in a postdoctoral fellowship in drug-abuse research at Texas A&M University.

'94 **Michelle JELINCH** graduated from the Monterey Institute of International Studies with an M.A. in teaching English as a second language in 1995 and is now a full-time faculty member at Hartnell College in Salinas, Calif., teaching ESL. **Janis BARNEY Aziza Varo** is a nationally certified massage therapist; she also works as a services administrator for a software company.

'95 After graduating from medical school at Michigan State University, **Estaban LOPEZ** has moved to Houston with his wife, **Agueda LOPEZ** (Oakes '92), and their three daughters, where he is completing a residency in internal medicine and pediatrics at the University of Texas at Houston.

College Eight

'82 **April ZILBER** has been working as a glass artist for six years; "still trying to figure out what to do with my science background," she writes.

'83 **Brian McRAE** is living in the beautiful northern-beaches area of Sydney, Australia, with his wife and six-year-old son; he is the technical director for the Australian Water and Wastewater Association. He would be happy to hear from anyone at bmcrae@awwa.asn.au.

'85 Since receiving an M.S. in forest resources from the University of Idaho in 1994, **Natalie SHAPIRO** has been working with environmental groups in Idaho and is currently doing research for attor-

neys in a lawsuit against one of the national forests; she is also involved in human rights issues, such as protesting the Aryan Nations parade in northern Idaho last summer and fighting antigay initiatives.

'88 **Kelley BURST (K. B.) Singer** is an internal medicine physician and mother of Oskar and Otto; she is married to a Brandeis University graduate.

'90 After finishing an M.D. at Boston University, **Aaron PERLMUTTER** is completing his residency in internal medicine at the University of Hawaii.

'91 After two busy years at Netscape, **Heather TRUMBOWER** is working as a software engineer for a pre-IPO company developing enterprise application integration software.

'94 An identical twin herself, **Tracy Lea SMITH Oskolkoff** is now the proud mother of identical twin girls.

'95 **Winnie POON** is working in the Asset Management Department at Solectron Corp.

'98 **Corey QUINN's** company, Quintal Internetworking LLC, provided a live video/audio broadcast on the Internet of all the action taking place at O'Brien's Irish Pub in Santa Monica, Calif., on St. Patrick's Day.

Graduate Studies

'81 **Kathy Louise RAFKIN** (M.A., literature) is the author of *Other People's Dirt: A Housecleaner's Curious Adventures*, a collection of humorous and thoughtful essays drawn from interviews with housecleaners and her own experiences cleaning other people's houses.

'86 **James HATTERSLEY** (M.S., chemistry) has moved with his wife, Jennifer, and his children

to Salt Lake City for Anesta Corp., an anesthesiology/analgesia pain management drug delivery company.

'88 **Eugene SHEEHAN** (Ph.D., psychology) was chosen the 1998 Distinguished Scholar at the University of Northern Colorado, where he is professor of psychology and department chair; the honor carried with it an award of \$1,500. **Hardi PRASETYO** (Ph.D., earth sciences) has been appointed assistant to the minister of mines and energy in Indonesia.

'89 **Jon HOLTZMAN** (Ph.D., astronomy), an assistant professor of astronomy at New Mexico State University in Las Cruces, won a campus award for outstanding teaching.

'91 **Wolfgang ROSENBERG** (cert., theater arts) has given up commuting from San Francisco and moved to Santa Cruz permanently.

'92 **Ceyda CAN** (M.A., applied economics) married Kutlu Aricanli in 1998, and they live in the San Francisco Bay Area.

'96 **Lucía RAEL** (M.A., education) has been selected as advising and retention coordinator for the Title III Grant Project at Oregon Institute of Technology in Klamath Falls. **Portia ROLLINGS** (cert., science illustration) provided the cover art for the July 1998 issue of *National Geographic*. (See page 15.)

'97 **Alexander (Sasha) BOGDANOWITSCH** (M.A., music) wrote and performed a piece titled "Atom Turning in the Sun of Eternity" at the American Festival of Microtonal Music in 1998; his piece was described as an "intriguing work" with a "winning authenticity" in a *New York Times* review of the festival.

'98 **Katherine SPILDE** (Ph.D., anthropology) has been appointed policy analyst/writer on the

national Gambling Impact Study Commission; she is in charge of writing the section on Indian Gaming for the commission's report.

In Memoriam

Eugene FRANK (Cowell '76), a passionate Jew and cocreator, with his wife, Leslie Gattman, of a Jewish ceramic arts business, died of an aneurysm at his home in Forestville, Calif., in November 1998; he was 45.

Terence FREITAS (Crown '97), who had been working to preserve the culture of the U'wa, an indigenous people in Colombia, was found shot to death near the Colombia-Venezuela border in early March; he was 24. Friends of the Freitas family have established an endowment at UCSC in his honor to support the research of undergraduate students in environmental studies; to make a contribution to the endowment, contact Christina Valentino, director of development for the social sciences, at (831) 459-3857.

Christoffer Erik HARMS (Cowell '91), a former Peace Corps volunteer, who had worked for the U.S. Geological Survey on hydrology projects and helped run a safari business, committed suicide in November 1997. At the time of his death, he was a master's student in civil engineering at San Diego State University.

Vicken MARKARIAN (Stevenson '94) died of complications from an auto accident in December 1998; he was the husband of **Lise MARKARIAN** (Merrill '95).

Laurie LATZER Webb (Porter '76) died in May 1998 in Farningham, England, where she lived with her husband, Jonathan Webb.

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