

UC SANTA CRUZ

SUMMER 1997

R E V I E W



Developmental Psychology at UCSC: How We Grow and Learn

Also: UCSC's first professional school, the new field of bioinformatics, helping teachers teach writing, inaugurating our 7th chancellor

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UC Santa Cruz

REVIEW / SUMMER 1997

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Engineering expansion

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FROM THE CHANCELLOR

BY M.R.C. GREENWOOD

Celebrate UC Santa Cruz was the campus's theme for a myriad of public events held in May. In addition to presenting concerts, lectures, performances, film screenings, and exhibitions, we honored the investiture of the co-holders of the Neufeld-Levin Holocaust Endowed Chair; announced the naming of our first professional school, the Jack Baskin School of Engineering; and officially dedicated our stunning Music Center and adjacent Kretschmer Plaza. Another highlight, and certainly a personal pinnacle, was the campus's inauguration celebration.

These special occasions provided an excellent showcase of the campus for our local community and for visitors from around the state and the country—and they underscored that the true distinctions of UC Santa Cruz are the accomplishments of the faculty, students, and alumni, and the generous service and contributions of our friends and benefactors. Literally hundreds of campus members worked to make these recent events so successful—and I am pleased to extend my personal and most heartfelt thanks to each of them.

At the meeting of the UCSC Academic Senate last October, I posed four priorities, and at the final senate



DON HARRIS

We recently established the Millennium Committee that will develop a renewed consensus of our values, priorities, and opportunities for excellence.

meeting of the year in late May, I was gratified to report significant progress. These working priorities include increasing the effective presentation of the UC Santa Cruz story, both inside and outside the university; continually strengthening the quality and effectiveness of teaching, research, and management; building internal and external partnerships; and increasing assets and resources.

This publication features examples of the campus's progress toward achieving these priorities. The progress is indeed laudable, and it demonstrates that UC Santa Cruz is at the leading edge in many ways. Yet we can—and will—do even more to serve our students and our extended community. We recently established the Millennium Committee, a task force comprising faculty, staff, and students of diverse backgrounds and perspectives from across the campus, and including the president of the UC Santa Cruz Foundation. With input from other members of the extended campus community, the committee will develop a renewed consensus of our values, priorities, and opportunities for excellence that will guide us into the new century.

In closing, I want to thank everyone who helped make my first year as chancellor both exciting and rewarding. At this threshold of my second year here, I reiterate my commitment to work together as we continue to build the legend of UC Santa Cruz.

Fiat Slug!

A handwritten signature in cursive script that reads "MRC Greenwood".

M.R.C. GREENWOOD
Chancellor

UCSC launches the Jack Baskin School of Engineering

School will focus on the high-tech needs of the region and the state

WITH ITS DISTINCTIVE NEW School of Engineering, finalized on May 15 before the UC Board of Regents, UCSC is poised to assume a critical role in training the skilled engineering workforce that will drive the economies of Silicon Valley, the Monterey Bay region, and the state in the 21st century.

Instruction will begin in September for freshmen in electrical engineering, the first of several new degree programs that will join existing strong departments in computer engineering and computer science to comprise UCSC's first professional school. Studies have shown that California will need increasing numbers of proficient engineers in these fields to remain at the vanguard of the high-technology global marketplace.

Faculty hiring is also under way in the key discipline of applied and engineering mathematics, the second of the new programs. The

school's planners envision future programs in at least three other areas of growing importance: software engineering, engineering management, and molecular biotechnology engineering.

Ultimately, plans call for the School of Engineering to grow to about 90 faculty, 500 graduate students, and 1,200 undergraduates—significant expansions from the current totals of 24 faculty, 160 graduate students, and 320 undergraduates.

"The new School of Engineering at UC Santa Cruz is both timely and advantageous to the state," said UC President Richard C. Atkinson. "The campus has carefully planned the school and its programs to place UCSC on the cutting edge of intellectual developments and the application of new knowledge, as well as to address clear societal needs."

UCSC's expansion of its engineering programs also received a huge boost in May with the announcement of a \$5 million gift from Santa Cruz philanthropist and retired developer and engineer Jack Baskin (see story, below).

Chancellor Greenwood present-



Chancellor Greenwood, with donor Jack Baskin

ed UCSC's plans to the Board of Regents on May 15 and accepted Baskin's gift at a news conference a day later in San Jose.

"The Jack Baskin School of Engineering will foster innovative and entrepreneurial research, both by the faculty members we will recruit and by the students we will educate," Greenwood said.

Added Patrick Mantey, dean designate of the School of Engineering: "We are fulfilling our dream that UCSC can become a much more important player in the regional economy."

Regent's gift will fund engineering scholarships

DAVID S. LEE, CHAIRMAN OF DCMC Industries of Santa Clara and a member of the Board of Regents, has pledged \$100,000 to establish an endowed scholarship fund for the new Jack Baskin School of Engineering.

Annual income from the Regent David S. Lee Scholarship Fund will support one or more undergraduate students in the School of Engineering starting in fall 1998.

"As the closest UC campus to Silicon Valley, Santa Cruz can play a key role in helping us fill the shortage of trained engineers from institutions in the Bay Area," Lee said.

Lee said he will augment the fund with future donations. He also plans to contribute digital communications equipment to the campus.

"I greatly appreciate Regent Lee's generosity," said Chancellor Greenwood. "His wonderful gift sets an example of the kind of community partnership that UC Santa Cruz needs now to realize the full promise of the Jack Baskin School of Engineering."

Two of Lee's three children are alumni of UCSC: Eric Chih-Yen Lee, B.A. in psychology in 1988; and Gloria Chih-Ping Lee, B.A. in economics in 1990.

Philanthropist donates \$5 million for new engineering school

PROMINENT SANTA CRUZ community philanthropist Jack Baskin, a retired developer and engineer, announced on May 16 that he will support UCSC's new School of Engineering with a gift of \$5 million—by far the largest private donation in the 32-year history of the campus.

In recognition of Baskin's gift, UCSC will name its first professional school the Jack Baskin School of Engineering.

Baskin's donation will help UCSC attract topflight faculty members, offer scholarships, purchase equipment, and establish a

permanent endowment to provide future income for the School of Engineering.

"Jack Baskin's generous gift establishes a new benchmark for philanthropic contributions to UC Santa Cruz and in the Central Coast area," said Chancellor Greenwood. "It speaks to a wonderful partnership between an institution and an individual who has dreamed of making new futures possible for the young people of this region, the state, and beyond."

Baskin, founder of the construction and housing company

Jack Baskin, Inc., said his gift reflects his conviction that engineering is a critical discipline for the future well-being of the region and the state.

On a more personal level, Baskin noted, "Engineering was a stepping-stone for me. By funding the School of Engineering, I am paying back to the university, the community, and the country the great opportunities that were given to me. As young engineers graduate from UCSC, I will be delighted to know that they are on the road to success, just as I was."

UCSC ranks 15th in national survey of research universities

IN A COMPREHENSIVE NEW analysis of more than 200 top universities, UCSC ranks 15th in the nation among public campuses in the quality of its research productivity. The study and rankings are detailed in a just-published book that chronicles the rise of a new generation of postwar research universities in the United States.

The book, *The Rise of American Research Universities: Elites and Challengers in the Postwar Era* (Johns Hopkins University Press, 1996), makes the case that some of this country's newer research campuses are challenging many of the so-called "elite" universities in the quality of their research activities.

The authors, historians Hugh Davis Graham of Vanderbilt University and Nancy Diamond of the University of Maryland, assessed the performance of 203 research universities from 1945 to 1990. For the study, they measured per capita faculty research productivity—the creation of new knowledge—in everything from medical science to the classics.

"Although there are fewer surprises among the private universities, in the public system some dramatic rising stars are found," Graham says. UCSC is one such campus.

The campus's overall ranking of 15th in the nation among public campuses includes a No. 1 ranking in the survey's Social Science Index and No. 8 in the Arts and Humanities Index.

Other accolades

UCSC HAS SCORED WELL in several other recent surveys:

- ▶ In a survey published by *Yahoo! Internet Life* that assessed the computer environment of 300 campuses, UCSC was ranked No. 56 in the country.
- ▶ In *Hispanic Outlook in Higher Education*, UCSC finished 53rd nationally in the number of undergraduate degrees it confers on Hispanic students.



UCSC graduate Annie Wells wins a Pulitzer Prize for rescue photo



For the second consecutive year, a UCSC alumna has snared a Pulitzer Prize, journalism's most prestigious honor. This year's recipient is Santa Rosa Press Democrat photographer Annie Wells (College Eight '81), who won the prize for spot news photography. The Pulitzer Prize Board at Columbia University lauded Wells for her "dramatic photograph of a local firefighter rescuing a teenager from raging floodwaters." Newspapers across the country printed the photo (above) in February 1996 as seasonal floods swept through California's Sonoma County. Wells's interest in photography began at UCSC in 1979 when she designed her own major in science news writing and photojournalism. Last year, alumna Laurie Garrett, a reporter for Newsday, received a Pulitzer for explanatory journalism in recognition of her series of articles about the 1995 ebola outbreak in Africa.

Giving something back to UCSC

IN HONOR OF ITS 20-YEAR reunion, UCSC's class of '77 has donated \$35,055 toward a scholarship program for students with financial need. It is the largest gift ever made by a UCSC alumni class.

Steve Jung, president-elect of the Alumni Association, presented the check to Chancellor Greenwood at the class's 20-year reunion dinner in April, during the annual Banana Slug Spring Fair.

"We wanted to honor our time at UCSC by helping to ensure that others have the chance to benefit from a similar experience," said Jung. "We're proud that the class of '77 has earned its place in UCSC history as having done more for student scholarships

than any class to date."

"This donation sets a new standard for alumni and demonstrates the level of their commitment to UC Santa Cruz," Chancellor Greenwood said. "I'm hopeful that other classes will be inspired to give so generously, because the need has never been greater."

The \$35,000 gift adds to the UCSC Alumni Association Scholarship Fund, which provides support to students who have financial need, said Daniel G. Aldrich III, assistant chancellor for University Advancement. The fund awarded eight \$2,500 scholarships this past academic year.

The gift brings the scholarship fund to

more than \$265,000. The association's goal is to build the fund to a permanent endowment of \$1 million, added Aldrich.

Class gifts to provide current scholarships or build endowments have been a tradition since UCSC began hosting 20-year reunions five years ago.



Steven Jung, president-elect of the UCSC Alumni Association, presents Chancellor Greenwood with a larger-than-life donation from his UCSC graduating class.



Monterey Bay Research Crescent

- Teaching and Research Institutions
- MBEST Center
- Fort Ord Natural Reserve

Regents approve plan for MBEST Center

THE UC BOARD OF REGENTS voted in March to approve the initial stages of the master plan for the UC Monterey Bay Education, Science, and Technology (MBEST) Center, a regional economic development initiative based at the former Fort Ord military reservation.

UCSC, lead campus for the center, will now begin working on development activities that will create a community of forward-thinking researchers and educators on site.

The Regents ratified phases one through three of the master plan, which calls for new construction on 127 acres of UC-owned land within the city of Marina. Projections indicate that this development could create between 3,000 and 4,000 jobs. The property will provide room for about 1.3 million square feet of space for research and development, light

industry, and commercial and mixed uses. Development is expected to last for 15 years.

Future phases of development would occur on 357 acres of adjacent UC-owned land. The MBEST site also encompasses 605 acres of unique maritime chaparral—called the Fort Ord Natural Reserve and protected as part of UC's Natural Reserve System.

On the developable land, MBEST planners envision a research and technology park that will draw upon the strengths of nearly two dozen Monterey Bay research and educational institutions (see map, above).

Planners envision four areas of activity that would form the core of development: environmental science, technology, and instrumentation, especially coastal applications; biotechnology, emphasizing agricultural and marine applications; information science and technology; and multimedia education and entertainment.

Key UCSC contributors to Hubble mission

A FEBRUARY MISSION TO upgrade the Hubble Space Telescope had a distinctly blue-and-gold flair: UCSC alumnus Steven Hawley was one of seven astronauts aboard the space shuttle *Discovery*, while professor of astronomy and astrophysics Harland Epps helped design one of the telescope's sophisticated new instruments.

Discovery lifted off for mission STS-82 from Cape Canaveral, Florida, in the predawn hours of February 11. During five space walks, astronauts replaced two of Hubble's observing instruments and upgraded its sensors and electronics.

For Hawley, it was his fourth shuttle mission and his first since April 1990, when he and fellow UCSC graduate Kathryn Sullivan deployed the Hubble Space Telescope in orbit. Hawley earned his Ph.D. in astronomy and astrophysics from UCSC in 1977.

Epps is one of 18 astronomers on the science team for the Near Infrared Camera and Multi-Object Spectrometer (NICMOS), a powerful new observing tool that promises unprecedented views of the universe. Sensitive to infrared ("heat") radiation rather than visible light, NICMOS searches for newborn solar systems around relatively nearby stars, peers into the dust-shrouded cores of galaxies, and looks back in time to the primeval stages of galaxy formation.

Epps joined the UCSC faculty in 1989 after 24 years on the astronomy faculty at UCLA.

Astronaut Steven Hawley (Ph.D., 1977)



Arts dean Edward Houghton gives Chancellor Greenwood a baton to strike the first official downbeat, dedicating the new Music Center.

\$1 million campaign to support music program

IN CONJUNCTION WITH THE dedication of UCSC's new Music Center in May, Chancellor Greenwood announced the launching of the UCSC Music Campaign—a fund-raising program to broaden the scope and outreach of the campus's Music Department. The campaign will support efforts to recruit top high school seniors through four-year merit-based scholarships, as well as fund instrument and equipment purchases and other program needs.

The campaign has raised \$545,000—just over half its goal of \$1 million, which is expected to be reached by June 30, 1998.

To date, the lead supporters of the campaign are Ernest T. "Bud" Kretschmer and Jean Kretschmer, Harold "Hal" Hyde and Persis "Perky" Hyde, the late Siegfried Puknat, alumna Lisa Eltinge, and E-mu Systems.

Shakespeare Santa Cruz's 16th season

SHAKESPEARE SANTA CRUZ'S 16th season is scheduled to take place on campus from July 17 through August 31. This summer's festival will feature Shakespeare's *As You Like It* and *Richard III*. Also scheduled is *The Forest*, written by Alexander Ostrovsky. Tickets are available through BASS's South Bay Arts Line at (408) 998-8885, or from the UCSC Ticket Office, (408) 459-2159 (v/tdd). For a free festival brochure, call (408) 459-2159.

Defining Germany's place in the new Europe

AS ONE OF EUROPE'S most important powers, Germany has the economic, military, and political influence to be a major player on the world scene, yet the country's "burdened history" limits its ability to act. Unification in 1989 removed the physical scars of the Cold War, but the question remains: Can Germany reconcile its past with its future?

Fascinated by Germany's postwar emergence as a powerful nation and the tension generated by collective memory, Andrei S. Markovits and Simon Reich examine the ways in which history's shadow haunts Germany's future, in their new book *The German Predicament: Memory and Power in the New Europe*.

The authors consider the dilemma facing Germany and weigh contrasting views of its fate: that Germany has been tamed by the Holocaust and has no drive to expand; or that Germans have suppressed rather than obliterated their predatory ways and that its democracy, which was imposed by the Allies, is fragile.

"Both views are real, and that's where the tension lies," Markovits, a UCSC politics professor, said. "For the Germans, they're damned if they do and damned if they don't. If they're going to live up to their role as a major power, they will be called on to act, but then they are subjected to greater scrutiny than any other nation because of their history. And if they do nothing, they'll be accused of not pulling their weight as the wealthiest, most powerful nation in Europe."

GPA option is approved by Academic Senate

BY A TWO-TO-ONE MARGIN, members of UCSC's Academic Senate have approved a committee proposal that will permit new students—beginning this coming fall—to request letter grades for all classes and accumulate a grade-point average.

Continuing students will be eligible to request letter grades for all classes beginning this fall, but will not be eligible to acquire a GPA, says registrar Cecilia Rodriguez.

Alumnus verifies an ancient collision

PALEOBIOLOGIST Richard Norris, who earned his B.S. with honors from UCSC's Earth Sciences Department in 1982, made a big splash in the news in February by leading a team that investigated the biggest splash of all: the purported impact of a large meteorite in the Caribbean 65 million years ago.

Norris, now an associate scientist at the Woods Hole Oceanographic Institution, was co-chief scientist of an Ocean Drilling Program expedition that probed into the seafloor off the South Carolina coast. The team found bands of sediment that, in Norris's words, provide "proof positive of the impact." The layers included what appear to be vaporized remains of the meteorite itself, in addition to evidence that most life in the ocean was wiped out.

In memoriam



UCSC honored Kenneth Thimann by renaming its first biological sciences research facility, Natural Sciences 1, for him in 1972.

Kenneth V. Thimann, whose career as one of the world's leading botanists spanned more than 50 years at Harvard University and UCSC, where he served as founding provost of Crown College, died in January at the age of 92. Thimann died peacefully at his home at The Quadrangle, Haverford, PA.

A pioneering researcher in the field of plant physiology, Thimann was best known for describing the functions of hormones in the control and development of plants. He also was highly regarded for his research on the biosynthesis of pigments responsible for the colors of flowers and fruits and the action of various zones of the light spectrum on photosynthesis.

Thimann received the prestigious Balzan Prize in 1982, and his honors included membership in the National Academy of Sciences, the American Academy of Arts and Sciences, and the American Philosophical Society.

Thimann joined the faculty of Harvard University in 1935. In 1965 he came to UCSC at the urging of founding chancellor Dean McHenry to become professor of biology and the first provost of Crown.

Among Thimann's most noteworthy contributions to the campus was his nurturing of the UCSC Arboretum into a world-class collection of plants.

John L. Halverson, a founding faculty member of Stevenson College and a professor of literature, died in Santa Cruz in March after several months of illness. He was 69.

Halverson taught at Princeton University and was twice a Fulbright lecturer in Sri Lanka. He came to UCSC in 1966 and remained until his retirement in 1993.

Halverson was a principal architect of Stevenson's core course. His academic interests were wide-ranging and covered such areas as the literature of ancient Greek, medieval, and modern English eras; Buddhism; Christianity; linguistics; psychology; and Paleolithic art.

Siegfried B. Puknat, professor emeritus of German and comparative literature, died in March in San Francisco at age 83.

Puknat came to UCSC in 1964 as the first full-time faculty member hired—and only the third academic employee after Dean McHenry and Page Smith. He helped shape the campus in its formative years as author of the original preliminary bylaws for the Santa Cruz Division of the Academic Senate, founding chair of the Literature Department, an early provost of Cowell College, and chair of the building committee for College 4 (Merrill College).

One of the oldest student-directed organizations on campus, Grupo Folklorico Los Mejicas de UC Santa Cruz, celebrated its 25th anniversary this spring.



DAVID ALEXANDER

L I V I N G &

JAMES ANTHONY



At the Children's Discovery Museum in San Jose, a UCSC researcher records the interactions between a father and son to determine how parents help their children develop "scientific literacy."

LEARNING



Psychologists at Santa Cruz are taking a ‘sociocultural’ approach to the study of human development and, in the process, are reshaping the underlying principles of their field.

BY JENNIFER MCNULTY

The wonders and complexity of human development unfold like the pages of a family photo album. Infants coo, toddlers take their first wobbly steps, kids start school, teens battle to establish their independence, and adults juggle work and family responsibilities as their own parents grow old.

Within the field of psychology, developmentalists have the fascinating task of demystifying the cognitive, social, and emotional growth that takes place at each stage of life. They strive for insights that will help children become active learners who enjoy a well-defined sense of themselves and a close connection to friends and family. It is work that helps parents and educators understand what’s happening with kids, and it helps all of us recognize the common ground that unites us. ▶

Developmental psychology at UCSC was born in 1987 when Professor Catherine Cooper was hired to build the program. In only 10 years, Cooper has created a working group with a reputation for excellence that complements strong sibling programs in social and cognitive psychology.

At UCSC, developmental psychologists explore language and communication, learning, personality, friendship, and cultural issues across the life span. And they are working to create a more inclusive view of human development, recognizing that psychology's focus on middle-class, European American families has ignored too many people for too long.

The theme that underscores the direction of developmental psychology at UCSC is that children are seen as navigators, making their way through the rich and varied contexts of their daily lives. They learn to participate in the realms of family, school, and community—and in today's increasingly diverse world, many speak one language at home and another at school.

Several faculty members are exploring human development by conducting research in partnership with museums, academic outreach programs, day care centers, as well as schools, religious institutions, and community groups. Developmentalists today believe that a big part of what we learn as we grow up is how to operate in these different spheres. "These resources offer real pathways to kids, and our faculty are beginning to map these worlds for scholars, policy makers, and practitioners," says Cooper.

Schools are an especially important arena for research, and UCSC researchers have earned high marks for collaboration in their ongoing school-based projects. "Our rapport with schools is good because we treat teachers as partners," says Cooper. "We don't walk in and say 'We want to get data from your class.' We ask, 'What questions do you want us to include in this study?'"

Cathy Stefanki-Iglesias, principal of

Gault Elementary School in Santa Cruz, says working with Associate Professor Margarita Azmitia has prompted substantial changes at her school. Azmitia began a major study of childhood friendship at Gault and also helped Stefanki-Iglesias by running parent focus groups soon after the new principal arrived at Gault three years ago. "We've done major restructuring as a direct result of Margarita's work," says Stefanki-Iglesias. "It's valuable, hands-on research, and we really listen to it. She's exceptional."

Professor Roland Tharp, another member of the developmental program who is well known for his research on improving education for Native Hawaiian and Native

"People growing up in different communities may have different priorities. The field is going beyond assuming that universal models of developmental goals fit all children."—Barbara Rogoff

American children, is currently directing a five-year, \$20 million national research effort funded by the U.S. Department of Education. The UCSC-based Center for Research on Education, Diversity & Excellence (CREDE) is bringing together researchers from around the country to focus on five factors that affect the success of students: race, geography, poverty, limited English proficiency, and cultural background. CREDE's goal is to identify strategies that work for all kids and to influence policy from the local to the national level, says Tharp. Four other UCSC developmental faculty members are conducting research under the auspices of the center.

UCSC's commitment to a "sociocultural" approach to developmental psychology is helping to reshape some of the fundamen-

als of the field, says Professor Barbara Rogoff, a leading scholar who joined the faculty in 1992 and is now UC Santa Cruz Foundation Professor of Psychology. Over the past century, the leading developmental theorists fashioned goals of healthy development that tended to reflect their own values and life experience, says Rogoff.

"But people growing up in different communities may have different priorities," she says. "Literacy is important, but is being able to take multiple-choice tests important? It depends. The field is going beyond assuming that universal models of developmental goals fit all children."

As senior members of UCSC's developmental psychology program, Cooper and Rogoff are involved in numerous research projects, and each has made major contributions that have helped shape the field. Rogoff's 1990 book *Apprenticeship in Thinking* is widely recognized as a landmark in the field of cognitive development. For years, she has studied Mayan Indian communities in Guatemala and middle-class European American families in the United States to gain insights into the culturally specific ways that children's learning is encouraged by parents and caregivers. That work has revealed important similarities as well as differ-

ences that have deepened our appreciation of the role of culture in development. Rogoff's ongoing research projects with an innovative school in Utah and with the Exploratorium in San Francisco are exploring the different concepts of learning being developed by U.S. institutions.

Cooper's work traces how children and teenagers forge their own identities by integrating their cultural and family traditions with those of their schools, communities, and work. Her research with schools focuses on efforts to reduce dropout rates. She studies a variety of cultural and ethnic groups, including African American, Latino, European American, Japanese American, and Japanese youth, to illuminate cultural similarities and differences and contribute insights that will help policy makers seal leaks in the "academ-

Because children develop in a variety of social spheres, psychologists at UCSC study children at home, at school, and in the community.

Professors Barbara Rogoff (left) and Catherine Cooper visit youngsters at UCSC's Child Care Services.



ic pipeline” from kindergarten to college. These issues, which she investigates with colleagues, students, and community partners, form the core themes of her next book, “The Weaving of Maturity: Cultural Perspectives on Adolescence.” Her role in bringing diversity to the center of UCSC’s program has attracted national attention.

Cooper says she is “gratified beyond words” by the maturation of the program:

Junior faculty have earned tenure and taken on leadership roles in the program, and the first generation of doctorates and postdoctoral trainees are landing teaching and research positions around the country. Showcased below are several outstanding research projects that Cooper and Rogoff expect will further enhance UCSC’s standing in the world of developmental psychology and the program’s contributions to children’s well-being.

Those Darn Questions

Why is the sky blue? Where do babies come from? Why do we have to die?

Any parent knows that children ask the darnedest questions, but can parental responses encourage scientific thinking in children as young as four? Yes, says Associate Professor Maureen Callanan.

In partnership with the San Jose

29 years and counting...

UC Santa Cruz is chosen to carry on landmark study chronicling the lives of 100 individuals

IMAGINE HAVING the most private details of your psychological makeup documented on a regular basis for nearly 30 years. That’s the case for about 100 young adults who have participated with their families since the age of three in one of psychology’s most highly regarded longitudinal studies of human development.

Begun in 1968 at UC Berkeley by Jack and Jeanne Block, the “Block Study” has generated some of the richest data in the field of developmental psychology. After intense competition with other research universities, Jack Block, professor emeritus of psychology at UC Berkeley, recently chose UCSC to carry on his life’s work in part because of contributions made by Santa Cruz faculty, some of whom have ties to the project dating back more than 25 years.

“We can’t call them kids anymore, because they’re all in their 30s now,” says UCSC associate professor of psychology Per Gjerde, who became involved with the study in 1978 and is directing it at UCSC. Colleagues David Harrington and Avril Thorne have also been involved with the project for a long time.

“If you’re interested in how life unfolds—how we become who

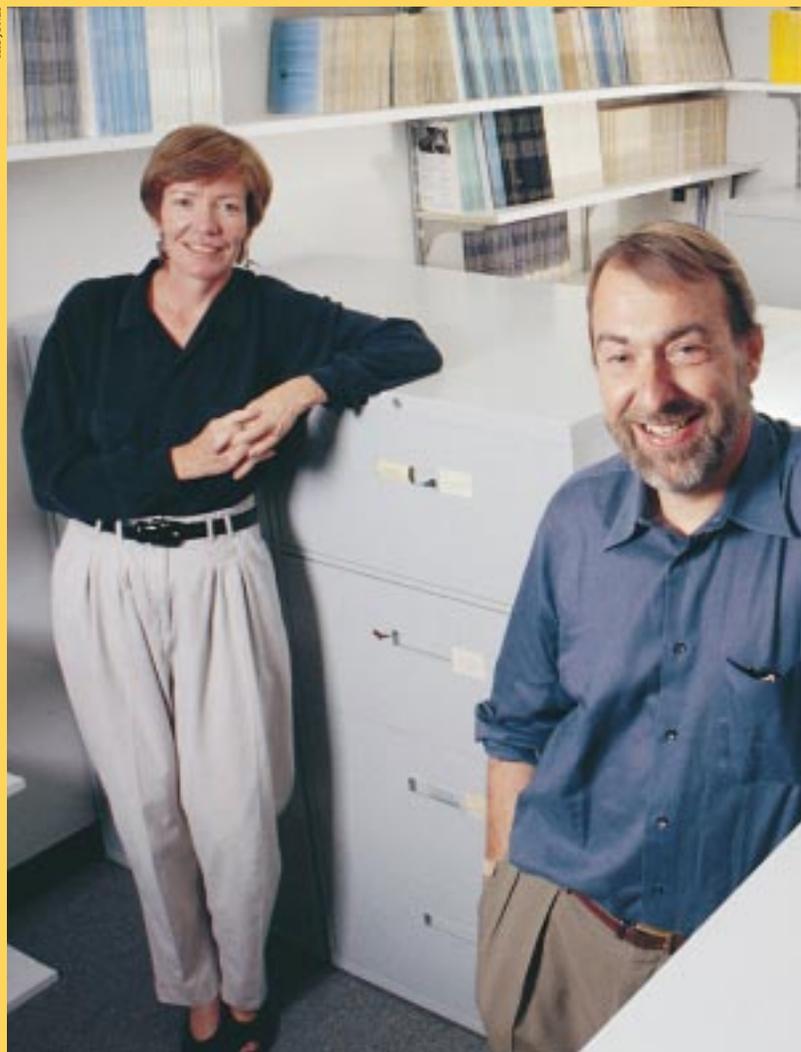
we are—you really have to follow people from early childhood into adulthood,” says Gjerde. “This study is unparalleled and provides a rich research and training resource for our students.” The project has been funded by the National Institute of Mental Health every year for more than 25 years and has generated more than 100 research papers, some of which are classics in their fields.

The Blocks designed the project in part to explore two themes of personality: ego-control and ego-resiliency. Ego-control measures the degree to which an individual has the ability to delay gratification in service of future goals. Undercontrollers act spontaneously; overcontrollers are more likely to plan for the long term.

Ego-resiliency, in contrast, refers to the ability to moderate one’s typical level of control to accommodate new circumstances. For example, a college student who parties all quarter but manages to buckle down and cram in preparation for finals is a “resilient undercontroller,” showing the ability to change when push comes to shove.

Participants have been evaluated eight times over the years, and vast amounts of information have

R.R. JONES



been gathered about each person. The latest assessment began this spring and is the first to be initiated under the auspices of UCSC. It is expected to take 12 months to complete.

One of the greatest values of in-depth longitudinal studies is that researchers can look back in

time and search for antecedents of later life outcomes. In a now-classic study with the Blocks, Gjerde was able to go back and compare children from families that stayed together with children whose parents later divorced.

“Until then, studies had shown how tough divorce is on

Children's Discovery Museum and a team of UCSC researchers, Callanan and postdoctoral researcher Kevin Crowley are observing spontaneous interactions between parents and kids to see how parents help their children develop "scientific literacy." The museum setting, brimming with hands-on exhibits, is rich with examples of children exploring unfamiliar subjects.

"Even though parents may not always

give the 'right' answers, the way they answer can encourage children to wonder about and investigate the world around them," says Callanan.

In one example of how youngsters integrate scientific information into their lives, a five-year-old boy was captivated by an exhibit that used time-lapse photography to demonstrate how plants grow and then die when they're not watered. Watching his

mother water the garden two days later, the youngster announced: "Now I know why you're watering the plants. Otherwise, they'd die like the plants at the museum."

The development of scientific reasoning is a gradual process, says Crowley. "Change doesn't necessarily happen instantly," he says. "It's not like a staircase where you go from one level to another. It's more like overlapping waves, with good ideas and bad



Pictured in the Block Study archives are (l-r) developmental psychologists Avril Thorne, Per Gjerde, and David Harrington, surrounded by the voluminous amount of data collected since the study's inception in 1968. On the back cabinet is the "M&M machine," an ingenious tool used by researchers to measure children's impulsive behavior. After manipulating six candies through the mazelike contraption, the children were asked to decide if they wanted to eat the candy now or come back two days later for three times as many M&Ms.

boys, in particular, who express a lot of anger and aggression," says Gjerde. "But our study showed that up to eight years before the divorce, boys in these families were antagonistic, difficult, and impulsive."

Suddenly, researchers had reason to consider the impact of raising a difficult child on divorce rates. "Raising a difficult child puts pressure on parents and may itself contribute to divorce," says Gjerde. "So it may not be divorce alone as much as the circumstances prior to divorce that affected these boys."

In a series of studies on the development of gender differences in depression, Gjerde found that young adults who described themselves as depressed had exhibited clear antecedents for the malady during their preschool years. In boys, the characteristics include a lot of anger and interpersonal antagonism. In girls, the early signs are not as strong, but the signals appear to include shyness, kindness, and relatively high intelligence, raising the possibility that smart adolescent girls may be at risk for sadness.

Associate Professor Thorne is tapping the Block data to extend her longitudinal research on personality and personal memories. "Most personal memories are not as plastic as people think," says Thorne. "Many long-term personal memories are told again and again, especially stories about trouble. The who, what, when,

and how of these memories don't tend to change much across time, but the meanings of these events do tend to change over the life span, as does their prominence in the grand life story." Thorne is exploring how personality and intervening life events influence the selection and interpretation of personal memories. She is eager to reassess Block participants at age 30 to see if their childhood memories have taken on new meanings. "The way people interpret past events has direct bearing on current and future development," says Thorne. "Past events cannot be changed, but their meanings can."

Associate Professor Harrington is using the Block data to study the development of creativity from early childhood to adulthood.

This assessment is being conducted by mail, in part because doing assessments has become something of a "logistical nightmare," says Gjerde. For the last one, when the participants were 23, researchers flew in participants from Spain, Japan, the East Coast—even a warship stationed near Libya. But Gjerde hopes to conduct in-person assessments again within five years.

"We must see them in person again," says Gjerde, conveying a parent's affection. "They have taught us so much about the richness of human experience and the complexity of human development. We can't stop now."

ideas washing over each other.”

One consistent but unsettling finding is that parents are roughly four times more likely to explain exhibits to boys than girls, regardless of the age of the child. “It’s depressing, but it mirrors classroom studies that show that teachers often pay more attention to boys,” says Callanan, who is encouraged by the eagerness of museum staff to modify exhibits based on her research.

“What we’re doing is a real partnership with the museum,” she says. “We’re not only doing our scientific work, but we’re able to help make the museum better, too.”

Playground Promises and Self-Esteem

For children and adolescents, school is a place to learn, and it’s often the hub of their social lives, too. Intrigued by how children manage friendships and how social issues affect self-esteem, Associate Professor Margarita Azmitia and her student researchers are conducting an in-depth study of more than 250 fifth, sixth, seventh, and eighth graders in Santa Cruz County.

“At one time or another, we have all worried about whether we belong,” says Azmitia, who uses a combination of observational studies, questionnaires, and interviews to gather data.

Issues of trust and loyalty are emerging as key sources of conflict, and the older students appear better able to resolve conflicts without ending friendships. Unlike some studies, Azmitia’s has not detected a widespread drop in self-esteem



among girls during the transition from elementary to junior high school. “More than 90 percent of the students had positive self-esteem, and there was no evidence that girls had lower self-esteem than boys,” says Azmitia.

The bad news, however, is that the 10 percent who had low self-esteem “seemed to be going through a very difficult time,” says Azmitia. “They didn’t think school had much purpose, and they had trouble keeping friends and working through problems. The girls, especially, had trouble moving beyond problems in their

friendships, sometimes thinking about them almost to the exclusion of everything else.”

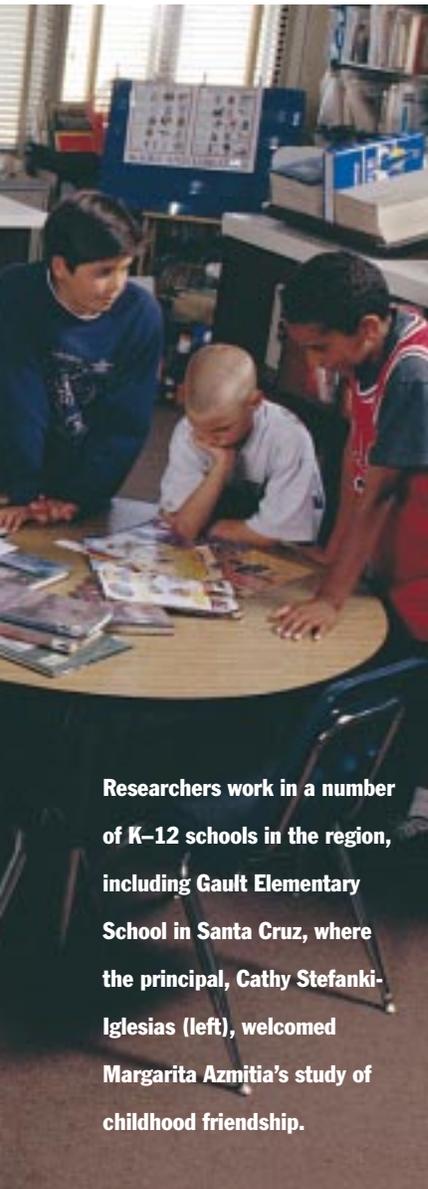
Heeding the Muse

One of the cartoons on Associate Professor David Harrington’s office door shows a man saying to a woman at a cocktail party: “I’m a writer, but not, thank heavens, the kind who has to write every day or he gets depressed.”

Despite stereotypes of the tormented artist, creative expression can be a source of real comfort for writers, painters,

dancers, and musicians. In a decade-long study of artistically talented adolescents, Harrington has found that being struck by the muse at a young age can play a strong role in boosting self-esteem and building relationships—it can even help motivate kids to stay in school.

To examine the role of creativity in development, Harrington has teamed up with the California State Summer School for the Arts, an annual month-long residential summer arts program for 450 high school students who are active



Researchers work in a number of K–12 schools in the region, including Gault Elementary School in Santa Cruz, where the principal, Cathy Stefanki-Iglesias (left), welcomed Margarita Azmitia's study of childhood friendship.

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in theater, music, dance, creative writing, film and video, visual arts, and animation.

Every year since 1987, Harrington has used questionnaires, interviews, observation, and follow-up studies to develop a rich psychological portrait of the participants. Creativity, he says, helps adolescents in several areas, including development of:

▶ Self-identity, or the sense that “This is me, and I’m not the same as everybody else.”

▶ Self-esteem, or the knowledge that there’s “something special about me to be proud of and happy about.”

▶ Competence, including the development of skills and one’s imagination.

▶ Emotional self-regulation, or what some students describe as a form of self-therapy.

▶ Social connection, or an opportunity to be with people and make them happy.

▶ Transcendent values, or an appreciation for beauty, truth, honesty, and justice.

There are costs associated with a high level of creative activity, however. A big source of tension for adolescents can be the sheer number of hours spent pursuing one’s art, which leaves less time for friends and school, says Harrington, who adds that competition among creative adolescents can be unsettling, and the way in which artistic talent makes individuals stand out also can be stressful.

Language Development Is Hard Work

Nameera Akhtar’s work on language acquisition in early childhood is shaking up the worlds of developmental psychology and linguistics.

Akhtar, an assistant professor of psychology who joined the faculty in 1995, studies how children learn new words and learn to speak grammatically. Her work began with a hunch that conventional linguistic theories about language acquisition were wrong. Those theories postulate that children have an innate ability to use language that is suddenly “triggered,” the way the flick of a switch turns on a light.

Akhtar’s hunch was a good one, and her work is providing

compelling new evidence that important aspects of language are learned gradually. In a typical study, Akhtar uses sentence structure from three different languages—English, Japanese, and Irish—to see when preschoolers demonstrate an understanding of standard English word order. Unlike in Japanese and Irish, English speakers rely on the subject-verb-object sentence structure to interpret meaning—who is doing what to whom. Akhtar uses made-up verbs and novel actions that children wouldn’t have a name for to ensure that the children have no previous understanding of a word’s correct usage or meaning. Sample sentences look like this:

Big Bird dacking grapes.

(English: subject-verb-object)

Big Bird the grapes tamming.

(Japanese: subject-object-verb)

Gopping Big Bird the grapes.

(Irish: verb-subject-object)

Although all of the children showed a preference for standard English word order, the two- and three-year-olds were much more likely to use Akhtar’s “weird word order” than were the four-year-olds, who consistently “corrected” Akhtar’s use of non-English structures. The results indicate that the younger children were still in the process of learning conventional English word order.

By documenting the way children’s language abilities progress over time, Akhtar’s research is poking holes in linguistic theory—and taking a little heat off parents. “Children are actively engaged in learning language,” says Akhtar. “They’re not waiting for someone to teach them.”

Speaking of Gender

If parents want to help their children escape the trap of gender-stereotyped communication patterns, one of the best things they can do is encourage boys and girls to play together, says Associate Professor Campbell Leaper.

Leaper, who studies the role of language in the construction of gender, has found that different activities foster different styles of communication. For example, playing army tends to elicit “task-oriented” talk as participants plot strategy and discuss how to “get the job done.”

By contrast, playing with dolls or toy dishes involves storytelling and more “collaborative” communication, says Leaper. “Traditionally, girls get a lot of opportunity to practice intimacy-related skills, and boys get a lot of practice with work-related skills,” says Leaper.

Both types of activities are important, but the problems arise when activities are segregated by gender. To the extent that boys and girls choose different activities as children, they develop different communication styles, says Leaper. “By the time we’re adults, everyone is reaching for the latest pop psychology book about why women and men can’t talk to each other,” he says.

Minimizing gender segregation will help boys and girls develop similar styles. “If boys and girls don’t play together as children, how can we expect men and women to get along in the workplace or in love relationships?” asks Leaper.

the sequence master

IN THE 1840S, PROSPECTORS SCoured California's hills to stake their claims in a frantic search for gold. Today, another Gold Rush is sweeping the country, but the stakes are far higher. The quarry of this high-tech pursuit, more precious than any mineral, is the genetic gold buried within our cells: DNA, the blueprint for life.

Researchers stand on the threshold of decoding the complex instructions in the strands of our DNA. Spelled out bit by bit, these instructions tell a body how to develop from conception to death and how to function from day to day. They also may contain errors, triggering disease. Charting this genetic landscape, our "genome," is the goal of the Human Genome Project, which will wind up next decade.

A map of this landscape could have profound benefits for human health. Genetic screens may pro-



Sequences of letters from human DNA illuminate computer scientist David Haussler, leader of a UCSC group applying powerful computational techniques to dig through mountains of biological data.



Computer scientist David Haussler leads a pioneering UCSC group in the booming field of

bioinformatics

vide early warnings for a host of inherited diseases. More tantalizing still, researchers hope to design new drugs by studying disease-causing genes and the cellular gears they drive. Biologists also plan to compare our DNA to the genomes of other organisms, which should unearth the evolutionary roots of life.

To realize those visions, researchers will need smart tools to cope with the staggering size of biological databases. The human genome alone holds 3 billion units of raw genetic data—mountains of information that conceal life’s key genes and their functions. Some of the nation’s top computer wizards have allied with biologists to create automated ways of mining those nuggets. Their hot new science is called bioinformatics.

“This field represents the convergence of two great technologies of the last half of this century: the computer revolution and biotechnology,” says David Haussler, professor of computer science at UCSC. “Everyone from pharmaceutical companies to molecular biologists is screaming for bioinformatics. It truly has the potential to revolutionize medicine and the life sciences.”

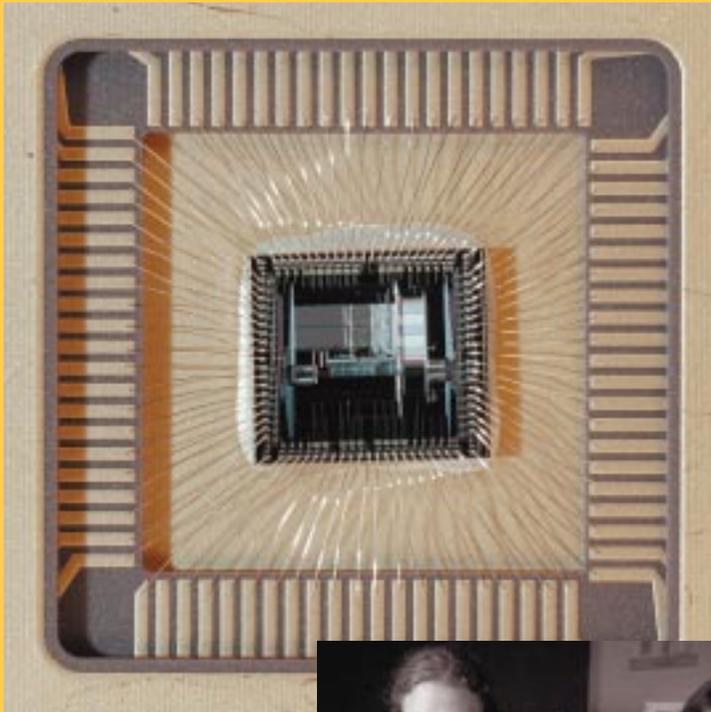
A tall and eloquent man with a fondness for suspenders, Haussler leads a young group

at the forefront of bioinformatics. Their work spans four UCSC departments: computer science, computer engineering, chemistry and biochemistry, and biology. Both graduate students and undergraduates play important roles.

All point to Haussler as the reason for the team’s success. “David is a first-rate computer scientist, but he also listens carefully to biologists to learn what we know and what we need,” says Harry Noller, director of UCSC’s Center for the Molecular Biology of RNA. “His group has developed some terrific computational approaches in a very short time.”

Geneticist Sean Eddy of Washington University, another leader in the field, says Haussler’s signal achievement is bringing “rigorous mathematical formalism” to bear on biological data analysis. “The ideas he’s contributing are very powerful and are grounded in serious computer science and statistics. He’s a brilliant scientist, and he takes the biology very seriously.”

To see why the statistical power of bioinformatics is a boon for biologists, one need only ponder the volume of data they face. The human genome’s billions of units act as “letters”—four different chemical building blocks that interlock along the DNA molecule.



Computer engineer Richard Hughey, flanked by undergraduate David Dahle (left) and postdoctoral researcher Jeff Hirschberg, holds a prototype chip for his “Kestrel” programmable array. Kestrel will boost the speed of searching through biological databases by a factor of 100 or more. The team used computer-aided design to cram efficient processors into chips just a few millimeters square (see enlargement, above).



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Those letters spell out about 100,000 recipes, or genes, that each cell follows to make its rich broth of proteins. Those proteins, in turn, perform the elemental work of life.

To scan 3 billion letters at a pace of 10 per second would take nearly a decade. Indeed, just finding and defining a single gene used to take years in the lab. Now, computers can help identify new genes in a matter of days.

However, only about 3 per-

cent of the human genome contains genes. Most sequences of DNA letters, biologists believe, encode nothing at all or serve some unknown purpose. And within most genes, the instructions may start and stop dozens of times, interrupted by more apparently useless DNA.

“Genes don’t raise red flags and say, ‘Here I am!’” Haussler says. “You need intelligent programs to locate

where they begin and end.”

Creating those programs is where Haussler’s group excels. His team’s most potent method has an intriguing name: hidden Markov models, or HMMs, named for a turn-of-the-century Russian mathematician. Since the mid-1960s, researchers have used HMMs to reveal patterns within human speech. In essence, HMMs provide statistical models of different ways to pronounce a word. “If someone comes along with a new accent, you’ll recognize the word because the

model gives you a picture of the variability,” says Kimmen Sjölander, a graduate student under Haussler.

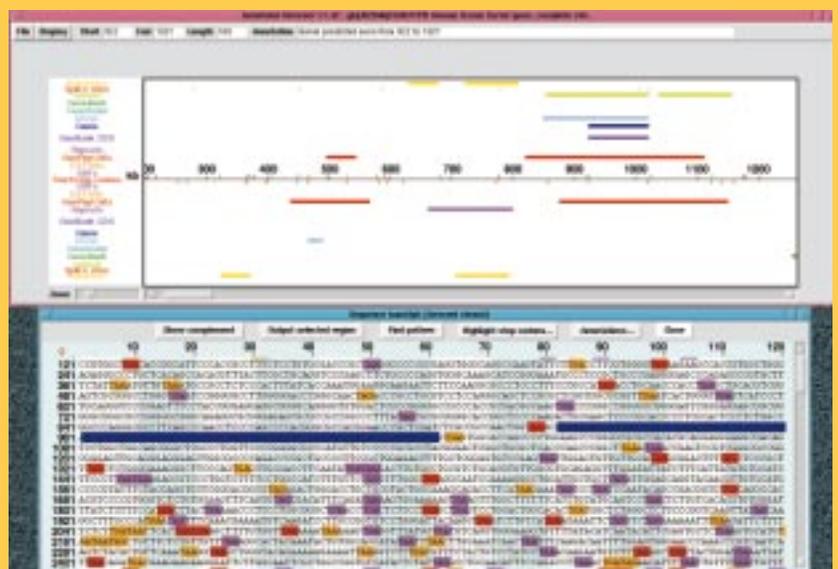
DNA, like speech, also obeys rules of “grammar.” Only certain patterns of letters lead to viable genes; special letters tell the cell when to start and stop the

protein assembly line. In 1992, Haussler’s group proposed that one could apply HMMs to bio-

logical data. The group now uses HMMs to create libraries of the “words,” or genes, that a genome likes to say—and to expose subtly different words that may represent new genes.

One notable program that relies on HMMs is “Genie,” a gene finder devised with researchers at Lawrence Berkeley National Laboratory. UCSC graduate student David Kulp, Genie’s main brain, explains that it almost always pinpoints the most probable genes in a novel sequence of DNA better than any other program.

Genie may help grant the wishes of biologists such as UCSC’s Manuel Ares and John Tamkun, who study yeast and fruit flies, respectively. Yeast and flies may seem like lowly lab critters. However, they serve as valuable models for many human processes, because all living things—from primitive bacteria to people—share much of the same basic genetic machinery. Ares and Tamkun hope to employ bioinformatics to compare and contrast the well-studied genes and proteins in their organisms with unknown genes arising from the



COURTESY OF DAVID KULP

Human Genome Project.

One also must know the shape of the protein that a gene encodes to grasp the gene's role in the cell. Haussler's group has made inroads into this "protein folding problem," an urgent issue in pharmaceutical research (see sidebar, right). Haussler collaborates with UCSC biochemists Anthony Fink and Lydia Gregoret, who probe the details of how proteins fold. In particular, bioinformatics may help them unravel the mystery of certain proteins that clump into lesions, triggering Alzheimer's and other devastating diseases.

These colleagues point out, and Haussler concurs, that bioinformatics is no panacea. Lab research by biologists and chemists will always be essential to test the predictions of computers and to see how genes and drugs work in living things. But all agree that computational tools will grow more critical as the torrent of biological data swells.

"I can't think of anything more rewarding than exploring the human genome and trying to decipher its messages," Haussler says. "It's exciting to be one of the pioneers in this area, setting the stage for the work of generations to come."

—Robert Irion

FACING PAGE: This display shows how the "Genie" computer program forages through biological sequences for genes. At top, the purple bar shows the location of a gene, correctly predicted by Genie (blue) but missed by competing programs. At bottom, Genie sifts for key strings within a sequence of DNA letters.

take the protein challenge

A Santa Cruz team ranked among the world's best at a recent contest to predict how proteins fold

NEXT TIME YOU COOK fettuccine, grab a handful and hurl it at a wall. The resulting mess will give you some idea of what a folded protein looks like. It's a drippy tangle of ribbons and loops, seemingly without order.

That metaphor goes soft when one considers real proteins. Their shapes, it turns out, are anything but random. Of the 100,000 flavors of protein in a human body, each has a distinct shape, and it always crumples into its own unique pattern. For decades, researchers have hungered to learn how proteins turn these tricks, because a protein's convoluted form dictates its precise function in the cell.

Bioinformatics offers a potentially powerful approach: *predicting*, with computers, how proteins fold. Such knowledge might help chemists

design proteins for specific tasks, such as jamming the works of a nasty virus. It's a mightily complex problem, but a recent contest revealed solid progress toward solving it.

The international contest, called CASP2, drew 76 teams of researchers. Each team started with the same raw data—protein chains, spelled out as long strings of letters—and tried to predict how the chains would fold up. Independently,

Markov models (see main article). The team trained its intelligent programs to recognize familiar patterns within the protein chains, as well as subtle variations lurking within those patterns.

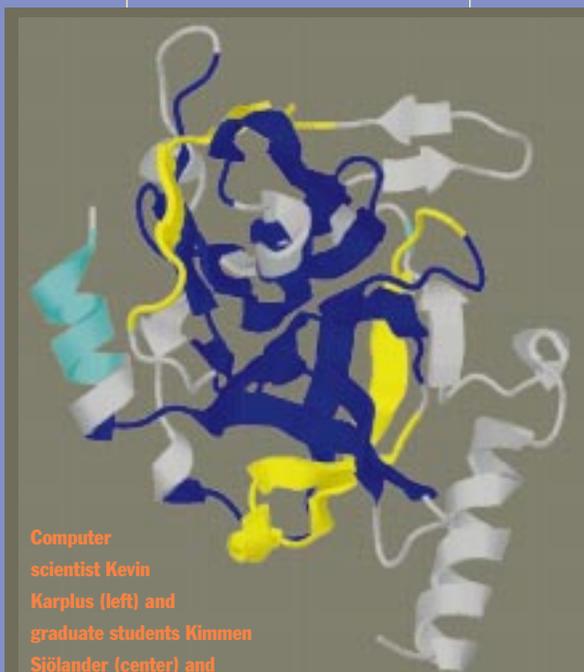
"Life tends to constrain itself to certain configurations," says graduate student Christian Barrett. "Our models reveal the statistical relatedness among proteins. They aren't scattered over infinite possibilities."

The work yielded several probable matches, which the team submitted to the contest. The results, announced in December, placed UCSC on the top tier—even among competitors who have studied protein prediction far longer than David Haussler's group has existed.

Endocrinologist Olivier Lichtarge of UC San Francisco analyzed the contest. By the simplest statistical measure, he says, "UCSC predicted five folds extremely

accurately, more than any other team." However, no team predicted an accurate model of an entire protein at the atomic level, the precision needed for useful drug design. That may change at CASP3, set for 1998.

—Robert Irion



Computer scientist Kevin Karplus (left) and graduate students Kimmen Sjölander (center) and Christian Barrett made a splash at a recent protein structure prediction contest. For the protein shown, their prediction matched the real structure within the blue sections. Researchers from the European Bioinformatics Institute collaborated on the work.



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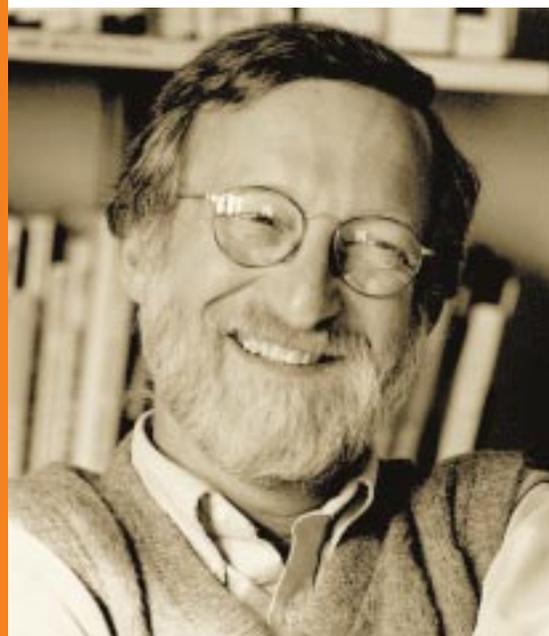
biochemists solved each protein's shape exactly with traditional and time-consuming lab techniques.

UCSC computer scientists spent long nights last summer comparing the new sequences to their huge library of known protein shapes using hidden

Write

On!

Walk into Suzanne Brady's fourth-grade classroom at Monte Vista School in Monterey and it may take a moment to pick her out of the group. "I used to have the children sit in straight rows, and I was at the front," says Brady, who has been teaching since the late 1950s. "Now it's hard to find me in the classroom. I'm no longer the authority. Now we have 29 teachers, and I just happen to be the tallest."



ABOVE: Don Rothman, founder and director of the Central California Writing Project. FACING PAGE: 20 years of thinking about, talking about, and practicing writing.

Coauthor of the book *Mindful of Others: Teaching Children to Teach*, Brady dramatically altered her teaching style in 1977, inspired by her experience at a UCSC summer institute on teaching writing. "I learned so much that summer that I knew there was no way I could go back and teach the way I had before," she says.

The institute Brady attended was the first offered by the campus's Central California Writing Project (CCWP), which celebrates its 20th anniversary this summer. Like its

Helping teachers teach writing



Photos by Roger Bunch



sister programs at seven other UC campuses, CCWP exists to improve the teaching of writing in California's schools.

The project offers a range of programs, from the five-week invitational institute—offered in both English and Spanish—to a myriad of other workshops and retreats. Funding is provided by UCSC's Humanities Division, UC's Office of the President, and the California and National Writing Projects.

In the past two decades, well over a thousand teachers from Santa Cruz,

Monterey, and San Benito Counties have participated in CCWP programs. Many, like Brady, found that the experience sparked major transformations, both professionally and personally.

It's CCWP's philosophy—that writing is a process, not just an end product—that sets the program apart. "When people learn to write well they're not just learning a skill, they're learning how to claim their voice and articulate it," says Don Rothman, CCWP founder and director and a senior

lecturer in writing at UCSC. "When people write about ideas that are significant to them, they want to share their work, and through sharing they become active participants in society."

CCWP doesn't promote any particular formula for writing, Rothman explains. Instead, teachers learn to help students tap into their thoughts and feelings, bring them out on paper, and revise them.

An important tool in this process is the writing response group, in which writers

In their own words ...

When children find their own voices, their writing becomes vibrant. The following examples were created by fifth and sixth graders taught by CCWP-trained teachers:



**Her horse was a mare
And grandma had spiky, bright pink hair.**

My cerebrum is the biggest part of my brain, and it helps me to figure out things such as math, puzzles, and spelling.

And the cerebrum helps me make decisions like last night I had a choice of steak or spaghetti. And when I went to the Fair, I decided to go the haunted house instead of the high slide.

Mi Mariposa

Mi mariposa es hermosa y generosa.

Tiene alas, alas grandes como el arcoiris.

Buela, buela que buela, por el bosque.

Se para en los arboles, come.

Mi mariposa tiene hijos, buela con ellos y vuelan a mi casa.

My Butterfly

My butterfly is beautiful and generous.

She has wings large wings like a rainbow.

Fly, fly, fly for the forest

Stop in the trees and eat.

My butterfly has children, she flies with them and they fly to my house.

I plan to write my new story 'Anna's Tutor' to be as long as it possibly can, even if it means I'll have to write during the summer.

Children's writing excerpted, with permission, from Mindful of Others: Teaching Children to Teach, by Suzanne Brady and Suzie Jacobs (Portsmouth, NH: Heinemann, 1994) and from student anthologies compiled by Jeff Arnett.

read their work to classmates and a discussion of the work follows. "The aim isn't to get everyone to agree with what a person writes but, rather, to collaborate and provoke dialogue," Rothman says. "Dialogue becomes a way of learning. If people can figure out how to sustain dialogue they can think together and reach solutions to difficult problems."

"A lot of us learned to teach writing in a very traditional way," says Sylvia Mendez, a bilingual resource teacher at Starlight Elementary School in Watsonville. "We'd say, 'Let's diagram sentences; let's do a three-paragraph essay on what you did this summer.' But we learn a very different approach at the Writing Project."

Mendez has cofacilitated three CCWP institutes in English and will cofacilitate this summer's Spanish-language institute. After her first institute in 1982, she changed her approach dramatically. "I learned the importance of providing a lot of prewriting stimulus for younger children—a field trip, a math concept, some kind of firsthand experience," she says. "If I just assigned a specific topic, children ended up writing what they thought I wanted to hear. When they were allowed to write from their own feelings and experiences, I saw such a powerful change."

"Once children experience the pleasure of communicating their own ideas they get excited about writing," Rothman adds. "Once they want to write, then they will want to learn how to write well."

Lucía Villarreal, who teaches first grade at Mintie White School in Watsonville, remembers the excitement in her classroom when her students focused their writing on the Gulf War. The activity became a highlight of the week—sparking intense classroom debates and a letter-writing campaign. Tim Willis, a history teacher at Anzar High School in Castroville, talks about two projects he and several other teachers collaborated on in the mid-1980s that inspired both them and their students. The first involved

correspondence between area high school students and students in Nicaragua. The second centered on a writing project by several high school classes who sent a collection of their work to the Soviet Union. The collection was displayed in Leningrad in a public exhibition. “The effort and creativity the kids invested in those projects was remarkable,” Willis says.

The inspiration and enthusiasm of Villarreal and Willis are typical of teachers who have participated in a CCWP institute. Ideas that are born in the small UCSC conference room during the summer take on momentum when teachers bring their newfound expertise back to their students, their colleagues, and their personal lives.

“Many institute participants emerge as leaders in their profession,” notes CCWP workshop coordinator Robin Drury. “CCWP teachers bring what they’ve learned back to their own schools, presenting workshops and modeling for others. They also serve in noticeably large numbers on county curriculum councils, statewide textbook committees, and as supervisors in UCSC’s credential program.” Several teachers were inspired to write books, and Willis even decided to run for the Santa Cruz City School Board following an institute he attended. (He was elected in November 1994.)

When people talk about CCWP, the discussion invariably turns to Rothman who, as one teacher says, “has truly touched many lives.”

David Schumaker, director of the Central Coast Consortium for Professional Development and a former middle school principal, explains it this way: “Don is one of the most inspiring, easy-to-work-with people, and at the same time, one of the most demanding. He encourages you so that even though you’re always going uphill you’re feeling good about it. He is a remarkable model of the kind of teacher we all aspire to be.”

—Barbara McKenna

UCSC writers reach out to K–12

Along with its programs for educators, CCWP also supports three programs that put UCSC writing students in contact with K–12 students throughout the Monterey Bay region. The university students not only serve as writing tutors but as mentors to the younger children. “The experience puts the university into the mental landscapes of the younger children and gives them some firsthand knowledge of what life in college might be like for them,” says Don Rothman, CCWP founder and director.



Sarah-Hope Parmeter (center), Deb Bell, and a student at Ohlone Elementary School

One of three programs was launched nine years ago by Sarah-Hope Parmeter, a writing instructor at UCSC, and Deb Bell, a fifth-grade teacher at Ohlone Elementary School in Watsonville. The collaboration began during a CCWP summer institute, Parmeter recalls. “Deb saw UCSC as a wonderful resource that was so close to her students and yet seemed so inaccessible,” Parmeter says.

To bridge the gap, Parmeter and Bell developed a program that involves weekly correspondence between university and elementary students, visits by each group of students to the other’s school, and a midyear potluck for all students and families. This past year the program moved to Alianza School (also in Watsonville), where Parmeter is now working with fifth-grade teacher Diane Bloch.

In any given quarter, at least half the UCSC students in Parmeter’s writing course are native Spanish speakers. The mentorship these students provide is

especially important for the younger students who also speak Spanish as a first language. “These young students may be the first in their family with an opportunity to go to college, and it helps them and their parents to hear from students who are already at UCSC who have come from similar situations,” Parmeter says.

Another program began four years ago when UCSC writing lecturer Jeff Arnett teamed up with fifth- and sixth-grade teachers at Westlake School in Santa Cruz. Each year, Arnett’s students become mentors to some 100 Westlake students. During the course, each of Arnett’s students authors an illustrated story (many of which have been donated to the Westlake library), while the Westlake students’ work is published in an anthology.

“My students feel like they’re making a difference and the Westlake students get a firsthand view of the university,” Arnett says. “It’s a great cross-fertilization.”

Roz Spafford, also a UCSC writing lecturer, oversees the Writing and Reading Action Plan (WRAP). Now in its 10th year, WRAP pairs UCSC writing students with approximately 40 teenage mothers annually from Watsonville and Santa Cruz high schools.

“Trying to be a mother at 15 or 16 is extremely demanding,” Spafford says. “It can be hard to think beyond the immediate demands of life as a new parent. The writing that they do helps them to think about their lives in fresh ways. They can express their feelings, and in that expression comes a desire for change and stability.”

As with students in the other two programs, WRAP participants also visit the campus. The young women get a glimpse of college life and learn about the support services on campus for students with families. They also meet with campus representatives and UCSC students.

The visit caps an experience that can be life-changing, Spafford says. “These young women get a vision in their mind of what it could be like to go to college. Their experience plants a seed of belief that maybe one day they can come here too.” —Barbara McKenna

UCSC CELEBRATES THE INAUGURATION



MICKY PFEIGER



MICKY PFEIGER

WHILE FORCING A LAST-MINUTE change of venue, rain on May 23 didn't dampen the enthusiasm of the 800 people who crowded into the East Field House to witness the inauguration of UCSC's seventh chancellor (and first woman to hold the post). After all, Chancellor Greenwood joked during her inaugural speech, in many cultures rain is considered a sign of good luck. Speaking of UCSC's past, present, and future, the chancellor also offered a more serious perspective: "UC Santa Cruz is no dream, it is no myth, it is no longer an experiment. Seasoned and matured, UC Santa Cruz now gazes through the portal to a new century, a period in which we will expand the fruitful partnerships that will link us, both within and without, in ways that will only enhance our strengths."



MICKY PFEIGER



MICKY PFEIGER



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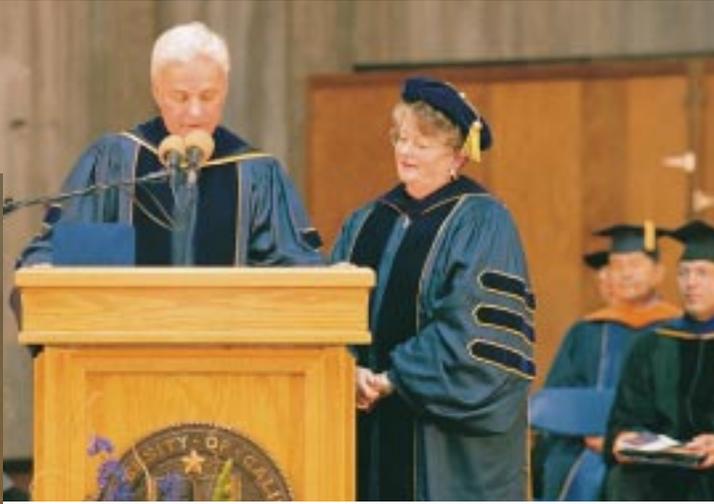
LEFT: The chancellor's son, James Greenwood, gives the benediction to close the inaugural ceremony. **BELOW:** Members of the public were invited to tour the campus on the morning of the inauguration. John Deck (right) leads a tour of the Geographic Information Systems Laboratory.



DOIN HARRIS

ABOVE: The traditional academic procession, with 160 UCSC faculty and staff participating, opens the inaugural ceremony. **RIGHT:** Some of the delegates from sister institutions are shown.

OF M.R.C. GREENWOOD



MICKEY PFELEGER



MICKEY PFELEGER



ABOVE: UC President Richard C. Atkinson performs the ceremony of investiture.
BELOW: Chancellor Greenwood greets founding chancellor Dean E. McHenry and his wife, Jane, at a University House reception.



MICKEY PFELEGER



USC PHOTO SERVICES



VICTOR SCHEFFRIN

ABOVE: A colleague assists staff member Jane Wong with her academic gown.
LEFT: Helene Moglen, incoming Academic Senate chair, offers a toast to UCSC's seventh chancellor following the presentation by outgoing chair Eli Silver of a gift from the senate—a framed photograph of the Keck Telescopes.



MICKEY PFELEGER

Alumni Association Councilors, 1997–98

Cowell

Stephen Klein,
President-Elect
Michael Twombly

Stevenson

Diana Reece, *Vice President for Programs*
Heather Urquhart

Crown

Michael Brown
Linda Wilshusen, *Vice President for Finance*

Merrill

Alan Acosta
Ricky Bluthenthal, *Past President*

Porter

Daren Lewis
Linda Ziskin

Kresge

Pamela Baer
Jim Eicher

Oakes

G. Chris Brown, *Vice President for Membership*
Renée Martinez

College Eight

Joanne Foxxe
Robert Weiner, *Vice President for Administration*

At Large

Mark Adams
Carol Bradshaw
Aimee Dudovitz
Doug Foster
Steven Jung, *President*
John Laird
Eric Thomas
Kathryn Tobisch

Ex Officio

Carolyn Christopherson,
Executive Director
Michael Cowan, *Past Chair, Academic Senate*
Sara Dozier, *Chair, Student Union Assembly*
Kathleen Flint, *President, Graduate Student Association*
M.R.C. Greenwood, *Chancellor*



Sierra Thai-Binh (Merrill '96) talks with prospective students at a college fair in San Francisco. "Everyone should do it at least once," she says.

Alumni join with Admissions to reach out to new students

RELIVING HER DAYS AT UCSC—and to a rapt audience, no less—is not something that Gayle Michaelson (Kresge '94) gets to do often, especially now that she juggles a busy schedule working as a counselor and pursuing her master's degree at Pepperdine University.

But last fall, when the Admissions Outreach Volunteer Program was launched with the help of the Alumni Office, Michaelson and over 60 other alumni volunteers had plenty of opportunities to share their UCSC experiences with prospective students and their parents throughout the state.

"I'm proud of the accomplishments that I had at UCSC," said Michaelson, who volunteered at several college fairs at southern California high schools and colleges. "I feel I got the best education possible."

Each fall, UCSC is invited to participate in more than 300 college fairs for high school and community college students—more

fairs than the handful of UCSC staff counselors can possibly attend. "Finding volunteers to assist with these college fairs is our top priority," said Heidi Rentería, outreach volunteer coordinator for the Office of Admissions.

As well as extending UCSC's outreach, Rentería believes alumni are especially qualified to spread the word about the high-quality educational experience that UCSC has to offer.

Sierra Thai-Binh (Merrill '96) would agree. "I felt I was really able to give them an idea of what UCSC was like," said Thai-Binh, adding that she was particularly impressed with the quality of the students she met. "The kids were really together," she said. "They sounded like they were ready for the future."

What questions are asked most frequently by prospective students and their parents? "The parents ask about the academics, and the kids ask about the social life," said Michaelson.

Alumni interested in participating in UCSC recruiting efforts are encouraged to contact Rentería in the Admissions Office at (408) 459-5518 or via e-mail at brrenter@cats.ucsc.edu.

New benefit worth cost of association membership

UC SC EXTENSION has announced a new benefit available only to members of the Alumni Association: a discount of \$35 on any class offered through UCSC Extension. With classes ranging from *Web Design* to *Effective Business Writing* to *The One Minute Drawing Class*, UCSC Extension offers an astonishing diversity of programs for professional development and personal growth.

Peter Kozelka is one alumnus who is finding extension's programs helpful. Kozelka graduated from UCSC last June with a Ph.D. in chemistry and in-depth technical expertise in water quality. But he had a difficult time finding a job outside the university setting. "Extension classes have really broadened my understanding of the environmental field," he said. "I'm learning how the business world works while taking classes with precisely the circle of people who can give me job leads."

Alumni Association members formerly received a 20 percent discount on a limited number of extension courses that didn't have enrollment restrictions. The new voucher, available to each Alumni Association member once a year, has no restrictions on its use.

The new \$35 extension class discount is equivalent to the cost of an annual Alumni Association membership. Annual members who take advantage of the discount will essentially get their Alumni Association membership for free.

To take advantage of this new benefit or for more information, call the Alumni Office at (800) 933-SLUG or (408) 459-2530.

Jessica Vodak reaches out to alumni in support of UCSC

SHE CHOSE SANTA CRUZ in part because she heard about frequent deer sightings on campus. But she's stayed because "at UCSC you are taught to think on your own and come up with your own ideas. It's very self-motivating." Today, Jessica Vodak is a senior anthropology major at Merrill who loves UCSC and the job that helps keep her here: program supervisor for the campus's Annual Fund.

The UCSC Annual Fund is one of the university's major fund-raising programs, and it has provided Vodak with a job and a challenge. Student callers like Vodak are Annual Fund representatives who ask for donations that support educational excellence at UC Santa Cruz.

"It's a really hard job, so I wasn't that great when I first started," Vodak said. But she stuck with it. "I learned how to overcome objections and have a good conversation with people." The people she phoned made her job even easier. "I love talking to alumni and parents," she said. "I learned what the school used to be like, what to do for my major, what classes to take. The Annual Fund is a really good way for alumni to communicate with current students." Alumni have responded generously to Vodak and her fellow callers, do-



DON HARRIS

Jessica Vodak, who just completed her junior year, has raised \$115,000 for UCSC since 1995—much of it from alumni. "I love talking to alumni," she says.

nating about half of the \$800,000 they raised in 1996-97 (parents of current students donated much of the rest).

Vodak started as a caller her freshman year and was promoted to lead caller as a sophomore and program supervisor as a junior. She spent the last academic year helping fellow callers understand the complexities of UCSC's financial situation. As one of the smaller UC campuses, UCSC depends heavily on the Annual Fund to sustain its quality programs. "If your belief in the program is high enough, if you know how badly we need the money," Vodak said, "it really comes across and helps you get support for the school."

The Annual Fund raises money for library books, computer labs, scholarship funds, and other programs. Donors are given the option of donating to any area on campus, and callers like Vodak see firsthand the difference these donations can make. "It's really a rewarding job being able to look around and say 'I helped do that. I helped raise that money.'"

And she certainly has helped raise a lot of money. Since joining the program in 1995, Vodak has raised more than \$115,000 through her efforts for UCSC. Caller fund-raising is challenging, but the callers are up to the task. As Vodak emphatically said, "If you can do that, you can do anything."

Announcing the Alumni Association's World Wide Web site:

<http://www2.ucsc.edu/alumni>

- ▶ Up-to-date information on alumni events
- ▶ Services available to alumni
- ▶ Volunteer opportunities
- ▶ Links to regional chapter Web pages
- ▶ Information about membership

ALUMNI CAREER CONFERENCE & JOB FAIR

Keynote speech by Jack Canfield, coauthor of the *New York Times* #1 best-seller *Chicken Soup for the Soul* and the recent *Chicken Soup for the Soul at Work*

Workshops with top career professionals

Networking luncheon with alumni in your job field

Job Fair

Saturday, September 20, 1997

8:30 a.m. to 6 p.m.

Westin Bonaventure Hotel

Downtown Los Angeles

COST (INCLUDES LUNCH):

\$60 Alumni Association members*

\$75 Nonmembers

*Add \$15 for registration after September 5

For more information, call the UCSC Alumni Association: (800) 933-SLUG



VICTOR SCHIRER

Twelve students received College Service Awards from the Alumni Association in 1996-97. The \$500 awards (\$250 when shared between two recipients at the same college) acknowledge outstanding student contributions toward invigorating life in the colleges. This past year's recipients are (l-r), top row: Jennifer Ebrahimi (Stevenson), Alex Palomino (Merrill), Jason Cupp (College Eight), and Shawntaviya Holmes (Oakes); bottom row: Julene Taylor (Kresge), Raymond Emanuel (Crown), Maria Vargas (College Eight), Roz Helfand (Porter), and Elizabeth Phan (Kresge). Not shown are Megan Fowler (Cowell), Wendy Leung (Stevenson), and Leigh Murrell (Cowell).

ALUMNI NOTES

Cowell College

- '68 Paul MARKOWITZ was recently reelected to the board of directors of the California Teachers Association.
- '76 Joshua MILLER is a professor of government and law at Lafayette College in Easton, Penn.; he plans to marry Diane Weger in August 1997 after a two-week rafting trip in the Grand Canyon.
- '78 Herbert ROSENBLOOM is still teaching math at the San Fernando High magnet, and he is in *Who's Who Among American Teachers*.
- '80 Kurt TOELKEN is living near Frankfurt, Germany, on a three-year assignment for the firm EDS.
- '85 Li Chiao-Ping (Nancy LEE) just received tenure at the University of Wisconsin-Madison and has been promoted to associate professor in the dance program. She has received fellowships for choreography from the Wisconsin Arts Board and Scripps ADF Humphrey-Weidman-Limon.
- '87 Danielle HERRMANN is the manager of Student Services at the Stanford University School of Engineering in Engineering-Economic Systems and Operations Research, and she is raising a son.
- '89 John APPLING has spent the last two years as a Peace Corps volunteer in Vladivostok, Russia.
- '90 Nicole SWENSON is leaving her position at the Overseas Marketing Division of Toyota Motor Corporation's Tokyo headquarters to pursue graduate studies at the University of Pennsylvania's Wharton School of Business.

Stevenson College

- '72 Connie MICHALAK Holmes is living in Austin, Tex.; her twin sons graduated as valedictorian and salutatorian of their class and are currently on the dean's list at Texas A&M University.
- '75 Celia WINKLER has been appointed assistant professor in the Sociology Department at the University of Montana.
- '76 Lee Palmer WANDEL will be at the Institute for Advanced Study in Princeton, N.J., during the 1997-98 academic year.
- '86 Stacy HANDELMAN is teaching a kindergarten/first-grade multiage class in Seattle; she just bought a large catamaran and plans on sailing the world on it one day.
- '87 Catherine ELLIS, who is working on a doctorate in cultural anthropology at Columbia University, was a visiting scholar at the Rand Corporation this year, and she was recently married.
- '89 After receiving a J.D. from Thomas Cooley Law School in January 1996, Yvette SPRAGUE Willson is working as a staff attorney for Legal Aid of Central Michigan; she is married to Thomas WILLSON (College Eight '88), who is finishing his Ph.D. in soil microbiology at Michigan State University.
- '91 Lisa SONIN Larsen was married in June 1996 and is pursuing a doctoral degree in psychology at John F. Kennedy University.
- '92 Pablo GONZALEZ received his M.S. in mechanical engineering from UC Davis in 1996 and is now working in the robotics field in Silicon Valley.

Matthew GREEN is a legislative assistant for Congressman Sam Farr in Washington, D.C.

'93 Steffen ECKART received his M.A. in teaching English to speakers of other languages from the Monterey Institute of International Studies; he is now living with his wife in Kanagawa, Japan.

Crown College

- '70 Norma MARASCHIN received a Ph.D. in chemistry from MIT in 1974; she is now director of research and development at Quantum Chemical Corporation. Suzanne RAMPTON has left the firm she founded to become senior vice president and director of account planning at Campbell-Ewald Advertising in Los Angeles.
- '71 Janet GLASGOW Mulshine is married, has two boys and the usual school and community involvements, and works in the field of environmental management. "Life is fun when children think about UCSC," she writes.
- '72 Tobeylynn BIRCH donated a videotape titled *First Steps in Library Research: The Presearch*, which she produced for the American Library Association, to the UCSC Alumni Association authors' library. Birch is director of Library and Information Services at the Los Angeles campus of the California School of Professional Psychology.
- '79 Chris METZLER is on sabbatical leave from his position as professor of geology and oceanography at Mira Costa College in San Diego County.

- '82 John STERITZ is living north of Houston with his wife and two children, exploring for oil in Venezuela, and trying to learn Spanish.
- '85 Frank SOUZA is controller for GST-Call America Business Communications in San Luis Obispo, Calif.
- '86 Jan WILLIAMSON "has put her art degree to good use spending most of her time filling out sweepstakes entry order forms, confident she'll be a million dollar winner before the end of the millennium."
- '89 Scott SEIWERT is the 1996 grand prize winner of the Pharmacia Biotech & Science Magazine Prize for Young Scientists. His winning essay was on RNA editing in trypanosomes, microscopic organisms that lead to tropical diseases in humans and cattle.
- '91 Mabel Ann LEW graduated from University of the Pacific's pharmacy program in May 1996 and is now working as a pharmacist. She and Chris LAWTON (Crown '90) are planning to get married in July 1997.

Merrill College

- '71 Ken DOCTOR has been named vice president/editorial of Knight-Ridder New Media, which oversees 34 Knight-Ridder Internet products, including Mercury Center, Philadelphia Online, and (Miami) Herald Link, along with online directories, entertainment guides, and house-hunting Web sites.
- '76 Fred DAVIDSON was recently named the deputy general counsel to a presidential com-

continued on page 28



Belle Yang and a painting from her first book, *Baba: A Return to China*

An odyssey homeward

Alumna Belle Yang (B.A. biology, College Eight '82) has written and illustrated two books that describe the China of her father's youth.

THE ACT OF PAINTING and writing often opens a window to another place and time. For Belle Yang, they transport her back to the China of her father's childhood. In two books filled with vibrant stories and fanciful artwork, Yang has given vivid new life to the country her father remembers.

"I'm fascinated with the old world that's lost," says Yang, 37, whose father fled China in 1947 during the communist takeover. "I write to take revenge for my father, for the opportunities he lost to time and war. But the greater passion is to tell the story of old China, about the lives of

other people—noodle makers, farmers, peasants—those who died without a voice."

Yang retells their stories in *Baba: A Return to China Upon My Father's Shoulders* (1994) and *The Odyssey of a Manchurian* (1996). She is working on the final book in the trilogy, "On Old Granddaddy Hill," which will offer readers a deeper look into old China through the eyes of Yang's great-grandfather.

The two published books have received critical praise. The *Los Angeles Times*, for example, called her first book "a captivating memoir ... lavishly illustrated and lovingly narrated." Author Amy Tan, in an introduction to *Baba*, said Yang "has created a world we can lose ourselves in, and when we emerge we are all the better for it."

In *Baba* ("father" in Chinese), Yang animates the characters of her father's boyhood in stories



that depict everyday life in the shadow of the Japanese occupation, the Russian onslaught, and the Chinese civil war. In the second book, she describes her father's 3,000-mile journey on foot across China to flee the approach of communist forces.

Both books are illustrated with Yang's own whimsical block prints and watercolor paintings: colorful, animated works described by one critic as "sparkling."

Yang was a UC Santa Cruz biology major when she took her first step toward writing the *Baba* books. During a year spent in Scotland in the Education

Abroad Program, Yang toured many of the great museums of Europe and realized that art—not science—was her true love.

After returning to UCSC to complete work on her bachelor's degree, Yang studied at the Art Center College of Design in Pasadena and at the Academy of Traditional Chinese Painting in Beijing.

In Beijing, Yang embraced her Chinese heritage. After returning to California in 1989, she yearned to hear her father's stories about his childhood—stories she had been unwilling to listen to during her own.

"When I was growing up, I wasn't ready to listen, I didn't want to hear, I didn't want to be Chinese," says Yang. "When I came back from China I was 30 and had made enough mistakes to be sympathetic to my own parents. I had absorbed enough of the Chinese symbols, the imagery. I had eaten food grown on the Chinese soil. I had become Chinese."

Ironically, writing about her father's past has made Yang feel more a part of her adopted country. "People say 'go out and vote' because that's how you participate in America, but there are other ways, too," says Yang, whose parents lived in Taiwan and Japan before immigrating to America when she was seven years old.

"I feel that by writing I'm participating in a democracy. I'm saying something that may change someone's viewpoint; giving my voice to my father—to a whole lot of others—and through that process becoming more American myself."

—FRANCINE TYLER

mission examining ways to protect the nation's critical infrastructures from physical and cyber threats.

'78 **Jean SCHMIDT Anthony** is an elementary school principal in Redwood City, Calif., and she and her husband are raising three children. **Peter BURKETT** is a commercial fisherman, a sheep farmer, and the father of four children.

'80 **Michael JURGENS** has pursued a career in the building industry as a general contractor. "Would like to hear from college buddies—it's been a while," he writes.

'85 **Alice LEARY Inoue** is a news anchor for Japan TV News and host of a sports show on the Fuji Channel in Honolulu, Hawaii.

'89 **Dale BOUTIETTE** has joined the San Francisco law firm of Kaufman & Logan, specializing in environmental insurance coverage and business litigation; he received his J.D. from University of San Francisco School of Law in 1995.

'90 **Carolyn (Kit) CHERRY** continues to work in the Minneapolis public schools; she is now coordinating a program for students with severe emotional/behavioral disorders. **Pamela LERI** is the vice president of Global Management Development and Training for Training Management Corporation of Princeton, N.J.; she is also working on a novel and recently received a grant from the Lannan Foundation to support her residency at the Dorland Mountain Arts Colony. **Walter LEVISON** is a consulting forester to PG&E, and he teaches African drumming.

'91 **Daniel "Jack" FITCH** is spending his sixth year of self-imposed retirement/exile, travel-

ing overland from South Africa to France; he will be returning to the U.S. in December 1997 and can be contacted at fitchum@aol.com. **Elizabeth WATSON** is in the Ph.D. program in art history at the City University of New York's Graduate School and University Center.

'92 **Dmitria SOKOLOV** has moved to Billings, Mont., to live with her fiancé, **Eric WAGER** (Merrill '92), who is a paramedic. She is pursuing a teaching credential at Rocky Mountain College.

'93 **Ana Silvia TURCIOS** is working toward an M.S. and an M.F.C.C. at CSU Los Angeles, and she is working for UC Cooperative Extension in L.A.

'96 **Carlos ARTETA** is pursuing a Ph.D. in economics at UC Berkeley.

Porter College

'74 **Teresa McNEIL MacLean's** drawings and paintings of landscapes were shown at the Side Street Café in Los Olivos, Calif., in January and at The Roasted Bean in Santa Ynez, Calif., in February.

'75 **Gene KRAHAM** is a family practice physician's assistant in a rural health clinic in a town of 1,000 in southwest Oklahoma; he has five children.

'77 **Rebecca MORGAN** was quoted in an article in the *Orange County Register* titled "Get a Grip: Seven Authors Pinpoint Bad Habits Worth Changing." She is the author of two books, titled *Professional Selling* and *Calming Upset Customers*.

'79 **Patty CASON** is working as a family nurse practitioner in Mill Valley, Calif.; she has two children, Noah and Mikaila.

'82 **Alan SCHROEDER's** book *Minty: A Story of Young Harriet Tubman* has won this year's Coretta Scott King Award for Illustration; it also received the Christopher Award, which is given to work that affirms the highest values of the human spirit.

'84 **Susan Laura GENTZ Gillespie** has recently completed a master's in counseling psychology at the California Institute of Integral Studies, and she married Constantine Gillespie in May 1996.

'85 After receiving an M.A. in secondary education in 1995, **Tracy PHILLIPS** is teaching art and language arts in a middle school, and she was recently married.

'88 **Joe COLLETTI** is selling computers by day and singing and acting by night.

'89 **Miriam SALZER** and **David DUNN** (Kresge '89) have a son, Reuben, born in November 1996.

'90 After receiving a master's in social work from San Diego State University in 1994, **Ché LE SEUR** works with abused children and reunites families as a social worker for Child Protective Services in San Diego.

'93 **Mark MACH** is in the life-span developmental psychology master's program at CSU San Bernardino.

'94 **Christina HOPKINS** planned to complete a J.D. at McGeorge School of Law in May 1997.

Kresge College

'74 **Sara GRISHAM McCarthy** is a principal consultant to the California State Senate Health and Human Services Committee.

'82 **Panda KROLL** and **Kevin VOLKAN** (Kresge '81), who met at Kresge, are moving from Santa Cruz to Boston, where they will celebrate their 10th anniversary and begin graduate programs. Kroll will enter law school at Boston University to pursue her interests in applying the Internet to online dispute resolution and new problems in intellectual property law; Volkan will pursue a master's degree in public health with an emphasis in biostatistics at Harvard's School of Public Health.

'87 **Eloise (Latimah) SHIM** is a computer consultant in the Washington, D.C., metropolitan area, and when she's not in front of a computer, she is writing a screenplay and teaching.

'88 **Kathleen "Kat" McDIVITT** is co-owner and marketing manager of an Internet training and Webmaster certification company called The Chapel Hill Group in Chapel Hill, N.C.

'89 **Christine GUERRE Grant** has been accepted as a predoctoral intern in counseling psychology at the University of Texas at Austin, and she and her partner, **Melonie MILLER** (Kresge '89), are moving to Austin this summer. **Mike HONSBERGER** is living in Leucadia, Calif., and has started Surf City Stock Footage, a company specializing in surfing footage for broadcast advertising. After receiving a master's in English from Old Dominion University and a J.D. from Temple University, **Jonathan David WEISS** is now working in the Appellate Department at Marshall, Dennehey, Warner, Coleman & Goggin in Philadelphia.

'90 **Susanna VILLAREJO Majernik** is attending graduate school to obtain a California CLAD teaching credential and she hopes to start teaching in fall of 1997; she has remarried and has a son, Zachary.

'92 **Jonathan BENAK** is an EMT living in Jackson Hole, Wyo., where, for the last five years, he has been a river guide during the summer and a snowboard instructor in the winter. **Richard HALL** is area manager for Integrated Health Services/Symphony Home Care and is living in the Napa Valley with his wife Rachel Leach.

'93 **Stephanie CREVIER Iles** and her husband, David, had their first child, Nicholas, in December 1996, and now she is a stay-at-home mom.

Oakes College

'74 **Dana PIERCE-Hedge** lobbies for public health bills for the California Department of Health Services; she is chairperson of the Sacramento Urban Indian Health Project; and she teaches Native American studies at CSU Sacramento.

'78 **Rebeca RANGEL** offers workshops and seminars on self-esteem and cultural diversity through her firm Unlimited Woman Consultants in San Jose.

'79 **Breton CARR** and his wife, Nadezhda Tselikova, have a baby girl, born in December 1996, weighing 3.5 kg., with her father's eyes, her mother's lips, and Zhirinovskiy's nose.

'80 **Sharron BASSANO**, an ESL instructor and program coordinator at UC Santa Cruz Extension, was a plenary speaker at the Thirty-First Annual TESOL (Teachers of English to Speakers of Other Languages) Convention in Orlando, Fla.

'82 **Sharon GRAYER Wolf** has a Ph.D. in chemistry from the Weizmann Institute of Science in Israel.

'83 **Annamarie MELODIA** has been appointed assistant vice chancellor for undergraduate education and director of the Office of Campus Interrelations at Indiana University-Purdue University Indianapolis; she works directly under vice chancellor for undergraduate education J. Herman Blake, former UCSC professor of sociology and founding provost of Oakes College.

'92 **Sasha DICKINSON Keller** is pursuing her master's in U.S. history at the University of Colorado, Boulder, focusing on labor history. **Catherine PFISTER** is pursuing her master's in social work at San Francisco State University; her e-mail address is pfisterc@sfsu.edu.

College Eight

'76 **Laura RICE Beauchesne** is an attorney specializing in technology law matters; she has worked for Merrill Lynch in New York City for the last five years. **John GROENINGS** is with Coldwell Banker in Sarasota, Fla.

'78 **Hope BARR Smith** is living and teaching in Big Sky Country with her husband, two daughters, two dogs, and two cats. "It really is the last best place," she writes.

'83 **William STANDLEY** is living in the small coastal town of Cayucos, Calif., and operating his own consulting firm doing wildlife research and creating World Wide Web sites for the Internet.

'90 **Aaron PERLMUTTER** is in the first year of internal medicine training at the University of Hawaii.

'91 **Elyssa ELDRIDGE** is living with her husband in Tempe, Ariz., and is a buyer/planner for Three-Five Systems, a company that manufactures liquid crystal display modules. **Emma Stacy JOHNSON** is working for the Service Employees International Union doing research to organize workers in agencies that serve people with mental illnesses or who are developmentally delayed. She lives with her girlfriend, Stephanie, who is an organizer with the SEIU.

'92 **Ross SMITH** has been busy implementing integrated pest management and sustainable practices in Central Valley agriculture for over four years; he also makes wine and is engaged to be married.

'96 **Wendy Nadine SZETO** expected to complete a master's in accounting at the University of Southern California in May and go to work for Arthur Andersen as an auditor/accountant.

Graduate Studies

'74 **Richard ZWEIGENHAFT** is Charles A. Dana Professor of Psychology at Guilford College in Greensboro, N.C., and author of *Blacks in the White Establishment? A Study of Race and Class in America* (Yale University Press, 1991); he has coauthored, with UCSC's Bill Domhoff, an article titled "Sophisticated Conservatives and Integration of Prep Schools: The Creation, Funding, and Evolution of the 'A Better Chance' Program," which appeared in the journal *Research in Public Policy*, vol. 5, 1997.

'86 **Lisa LOWE** is a professor of comparative literature at UC San Diego, and she recently published *Immigrant Acts: On Asian American Cultural Politics* (Duke University Press, 1996).

'91 **David SONNENFELD** is assistant professor of sociology at Washington State University, where he continues his research on industry, environment, and social movements in Southeast Asia and the Pacific Northwest.

'92 **Alan HOLYOAK** has been appointed associate dean of academic affairs at Manchester College in North Manchester, Ind., where he has been on the faculty for the past five years. He will maintain his appointment as assistant professor of biology and will continue to teach.

'94 **Sue GOETINCK**, a writer for the *Dallas Morning News*, has received a William Harvey Award for excellence in newspaper writing on the subject of high blood pressure. Her article, titled "Scientists Search for Genetic Causes Behind Hypertension," appeared in the *Dallas Morning News* on September 4, 1995.

In Memoriam

Mary CALDWELL (Crown '72) died from a recurrence of breast cancer on December 3, 1996. **Lucinda MELCHIOR Desmond** (Merrill '81) died after a long struggle with breast cancer at her home in Walnut Creek, Calif., on December 7, 1996. She is survived by her husband of seven years, Gregory M. Desmond. **David ORMOND** (Cowell '85) died of a heart attack on December 18, 1996, in Phoenix, Ariz.; he was 50. David Ormond was a school psychologist at the Phoenix Day School for the Deaf and a board member of the unit providing psychological services for the hearing impaired at St. Joseph's Hospital in Phoenix.

The people who helped launch biotechnology, the Internet, and the wetsuit may also have launched your career.

It's a little blurb, often overlooked in a news article. But its significance is profound: "Discovered at UC . . ." is said about hundreds of breakthroughs from the discovery of Vitamin E to the first atom smasher. And with each new achievement, the whole world benefits.

UC MEANS BUSINESS

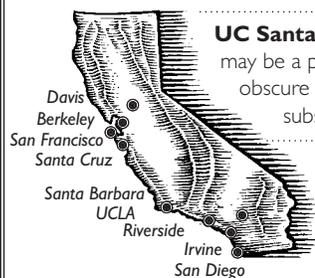
Over the years, UC researchers have pioneered innovations in every field, spawning new companies, new jobs, even entire new industries. The discovery of gene-splicing alone launched the \$8 billion biotechnology industry, which employs over 7,000 Californians. The creation of the wetsuit led to a \$100 million annual business. And the invention of the nicotine patch resulted in a new product that helps smokers kick the habit. The list goes on.

AN ACADEMIC TREASURY

UC students and faculty, collectively regarded as an "idea bank," attract millions of dollars in funding each year. For example, the university annually earns more than \$60 million in royalties and licensing fees from its inventions, more than any other university in the nation.



In fact, for every \$1 California invests in UC, the university raises another \$3 from the federal government and the private sector. A 300 percent return. But perhaps the greatest payback on California's investment comes from its most valuable resource: UC graduates. They go on to become engineers, scientists, doctors, artists, writers, and founders of their own companies. Their intelligence, skills, and imagination activate fresh ideas and new enterprises, creating a wealth of jobs for Californians. Just possibly yours.



UC Santa Cruz: Solving the riddles of cancer An intriguing substance harbored within the tissues of a tropical marine animal may be a potent weapon in the fight against cancer. But less than a thimbleful of the material exists, and no one can relocate the obscure animal from which it came. So researchers in the laboratory of UCSC chemist Joseph Konopelski are trying to make the substance from scratch, work that has drawn the attention—and support—of the American Cancer Society.

It may just be California's most valuable resource.

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