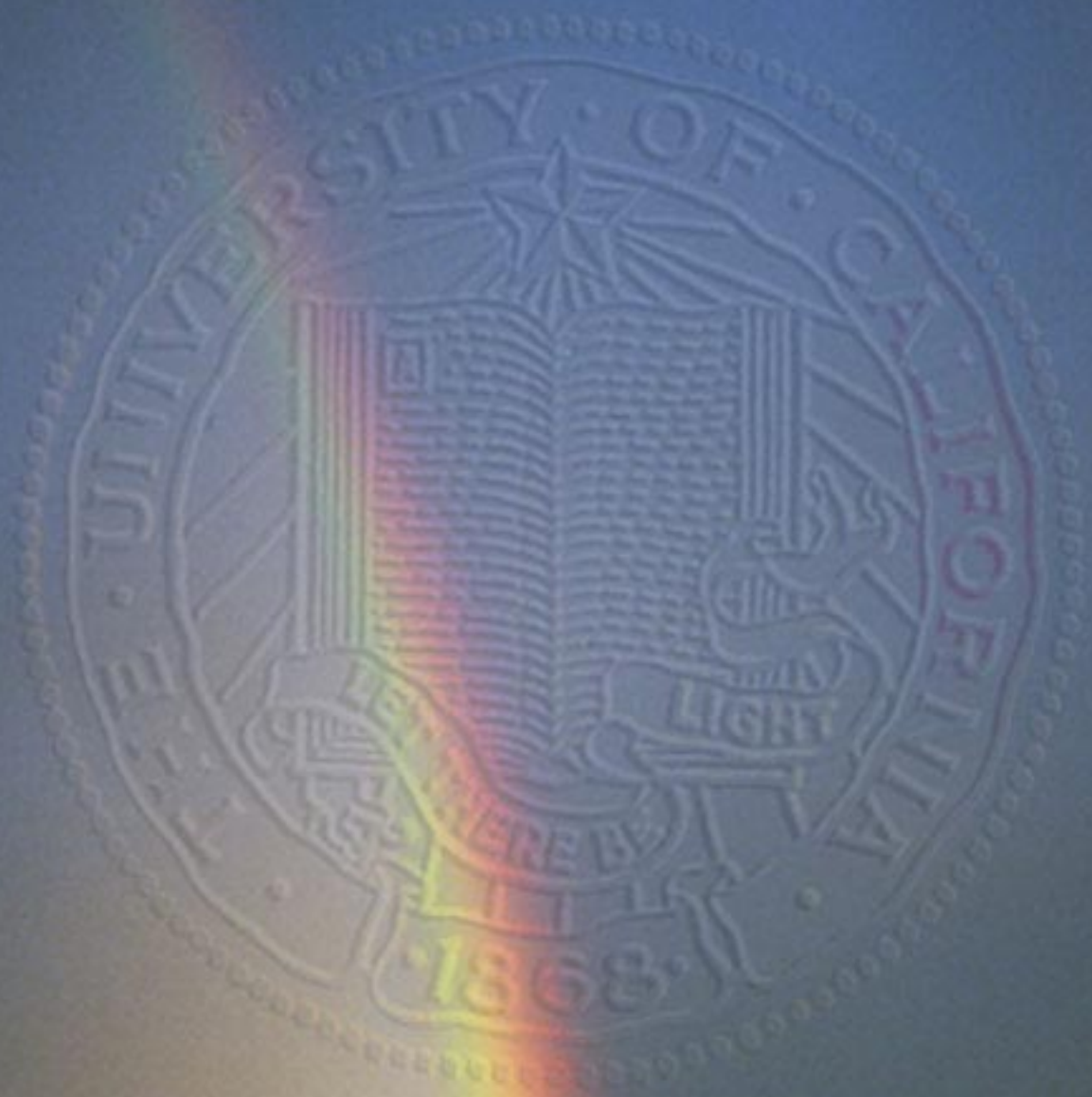


From Campus to Community

A tradition of public service



University of California

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In 1868, when the University of California was founded, California was known for the beauty of its natural resources. Today, California is known equally as well for its human resources, the intellectual capital that has been nurtured by the world-class education provided by UC. In many ways, UC contributes to the economic vitality and social health of the state and helps sustain California’s promise for the future.

The University of California and the state have evolved together. With 167,000 students and 130,000 faculty and staff, UC is widely recognized as the world’s premier public university. The UC system comprises nine campuses spanning the state from Davis to San Diego. In addition, UC manages three national laboratories — Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory and Los Alamos National Laboratory, N.M. — which are responsible for providing much of the nation’s defense and energy research. About 42,000 students graduate from UC annually, including 10 percent of the nation’s Ph.D.s. The university has more than 850,000 living alumni.

From Campus to Community

A tradition of public service

University of California students, faculty, staff and alumni are involved in virtually every facet of community service. They serve on community boards and in civic organizations, advise local governments on public policy and volunteer in environmental cleanup efforts and literacy tutoring programs. They take their knowledge, experience and enthusiasm into locations as diverse as California itself, from the cities and the coast to rural communities, deserts and valleys.

On any given day, UC students are serving patients at one of five university medical centers or at community health clinics. One measure of the medical services UC provides is the 1.9 million patient visits made each year to university hospital clinics and emergency rooms. Elsewhere in the community, UC students, faculty and staff are in schools helping connect classrooms to the Internet or teaching science or drama. In fact, UC has more than 800 academic, counseling and outreach programs for students and teachers across the state.

Another way the university serves the community is through UC Extension, the largest continuing education program in the nation. UC Extension annually enrolls more than 450,000 students in about 18,800 self-supporting courses statewide as well as in foreign countries. In addition to new online courses, extension classes are held in office buildings, community centers and satellite facilities, enabling people to expand and sharpen job skills or pursue personal interests.

UC also extends its resources to the public through its museums, performance centers, athletic facilities, libraries and botanical gardens that offer exhibits, concerts, seminars and other activities.

From Campus to Community explores these contributions throughout the state. The following 12 vignettes typify the broad array of community service programs sponsored by all nine UC campuses and the three national laboratories managed by UC — Lawrence Berkeley National Laboratory and Lawrence Livermore National Laboratory in California and Los Alamos National Laboratory in New Mexico.

Public service is essential to the educational and research programs of the university and underscores UC's commitment to improve the quality of life for all Californians.

The University of California . . . It just may be California's most valuable resource.

Extended learning



UC Extension helps workers retool careers

“There is no such thing as job security anymore. There is only skill security.”

Those words, from author and business consultant Terri Lonier, sum up Lisa Skrzynecki’s philosophy. “‘Permanent employment’ isn’t in my vocabulary, either,” Skrzynecki says, noting that companies are increasingly shifting to a temporary workforce or contract workers built around a small core of permanent employees. “You’re always going to have to continue updating your skills. You just can’t stick your head in the sand anymore.”

Lisa Skrzynecki (above) stayed on top of the job market with extension classes.

Extended learning

Like thousands of other Silicon Valley workers, Skrzynecki learned the importance of lifelong learning, with help from UC Santa Cruz Extension.

UCSC Extension is the largest provider of professional continuing education in Silicon Valley, with about 50,000 enrollments in 1995-96, more than double from five years earlier. “The growth of extension has been based almost completely on the needs of Silicon Valley residents to adjust their careers with increasing frequency as product cycles have decreased and the pace of Silicon Valley has increased,” says Janice Corriden, dean of UCSC Extension.

Keeping employer needs in mind, UCSC Extension offers more than 3,000 classes annually and 35 certificate programs, including courses in project management, environmental management, graphic design and semiconductor process engineering.

Extension also tailors training programs for companies and has customized courses in a matter of weeks. Clients, a veritable who’s who in Silicon Valley, include Borland, IBM, Intel, Lockheed Martin, Sony and Sun Microsystems.

For Skrzynecki, an extension certificate program was the key to a new job.

Skrzynecki, 35, had earned an undergraduate chemistry degree in Colorado and moved to California in the late 1980s. She found a job with a Foster City biotechnology firm and rose to supervisor in quality assurance. When the firm was acquired by an East Coast concern, she found herself unemployed.

Skrzynecki didn’t think it would take long

to find a new job. After all, she had solid job experience and was bright and ambitious.

“I was getting interviews, but I could never turn the interview into a job,” she recalls. “That’s when I realized I wasn’t current. I had graduated in 1987. My education wasn’t current enough.”

With financial assistance from a federally funded jobs training consortium, Skrzynecki turned to UCSC Extension.

Given her background, she chose to update her knowledge of the International Standard ISO-9000, a standard for quality control for manufacturers. She enrolled in extension’s Continuous Improvement and Quality Management certificate program.

On average, it takes nine to 12 months to complete the program, involving 150 hours of course work. Skrzynecki secured the certificate in seven months.

Skrzynecki also networked with fellow students. Ultimately, one of them told her about a job opening. With her certificate, she landed the position. Twenty-one months after facing unemployment, she was a senior compliance coordinator at a medical device manufacturer in Menlo Park.

“Had I not obtained the certificate, I would probably have remained unemployed longer, and any job I would have gotten would have been at a lower pay,” she says. “I might be temping still. And my self-esteem would be at rock-bottom. You can only get rejected so often.”

Skrzynecki says, “Unemployment teaches you life lessons. I had to go through that to get to where I am today.”

At a glance

■ UC Extension programs offer more than 18,800 courses a year throughout California and the world in locations as far flung as Oxford and New Delhi.

■ More than 425 courses are offered by UC Extension through “distance learning” involving technology such as the Internet and satellite videoconferencing.

■ More than 1,500 students study in 32 countries worldwide through UC’s Education Abroad Program.

■ UC’s Cooperative Extension provides educational programs such as technical farm assistance, nutrition education and 4-H in every California county.

Extended learning



UC's 4-H offers a safe haven after school

In the Imperial Courts housing project in South-Central Los Angeles, life can be bleak. Crime and poverty are no strangers to this gritty urban neighborhood. Wrought-iron bars adorn the windows of dwellings and commercial buildings are rundown and dirty. Graffiti is everywhere.

But for the children of Imperial Courts, the 4-H After School Activity Program (ASAP) offers them hope and a glimpse of a world beyond their neighborhood.

Children in the 4-H ASAP program (above) learn cooking skills as part of a nutrition curriculum.

Extended learning

Every weekday, about two dozen elementary school children visit an airy and freshly decorated 4-H ASAP classroom in Imperial Courts to get help with homework, tackle health and science subjects, like the solar system and human body, and share in a snack.

“Sometimes I can’t get them out of here,” Belinda Mendenhall, the site coordinator, says as children cleanup and prepare to leave one afternoon. “They want to stay. It’s really like a home away from home.”

Administered by UC Cooperative Extension, 4-H ASAP has taken the traditional 4-H concept of learning-by-doing, community service, nutrition and fitness activities and adapted it for an inner-city setting.

“For the children we serve, the key is academic enrichment,” says Deirdre Thompson, a 4-H youth development advisor in Los Angeles. “In many cases, they are performing at one to two to three years below their grade level, so the key is helping them develop a sense of mastery as it relates to academics and strengthening critical thinking skills.”

4-H ASAP is also aimed at teaching children how to get along with each other and providing them with an alternative to gangs and violence.

The temptations are great, says Mendenhall, a mother of five children and former resident of Imperial Courts. “It’s so easy to get hung up out there.”

At the South-Central sites, the program is structured: 2:30 to 3 p.m., homework; 3 to 4:30 p.m., a learn-by-doing or cooking activity and snack; 4:30 p.m., recreation, music or fitness, followed by cleanup and closing at 5:30 p.m.

Jessica Medina, a nine-year-old who attends Ritter Elementary School, says one of the benefits of the 4-H program is the help she gets with her homework.

The after-school program, typically located at public housing to reach at-risk children who are 7 to 13 years old, was launched in Los Angeles in 1988 and has since expanded to Northern California in Oakland. The program runs Monday through Friday for about 50 weeks of the year.

“There is an urgent need in the public housing community for programs that give kids a reason to say no to gangs,” says Sharon Brown, an Oakland Housing Authority official. “Studies show that youth who have weaker family structures, witness violence in their own families or in their environment and have low self-esteem tend to be those joining gangs. We’re fighting those risk factors as hard as we can.”

The program is built on a partnership with the private sector, school districts, local housing authorities, UC and the federal Department of Housing and Urban Development. It is reaching more than 1,200 children at 25 sites in Los Angeles and more than a 100 children at four sites in Oakland.

Other UC programs

■ Home Education Network: UCLA Extension formed a partnership with the Home Education Network to provide courses online worldwide.

■ Urban Partnership: UC Berkeley’s Urban Partnership Intern Program helps reduce the high attrition rate of new teachers in urban elementary schools through training and support. The program offers a California Multiple Subjects Teaching Credential.

■ Ventura Center: UCSB Extension offers bachelor and master degrees to students enrolled at its Ventura Center, where courses are taught by the same faculty that teaches on the main campus.

Extended learning

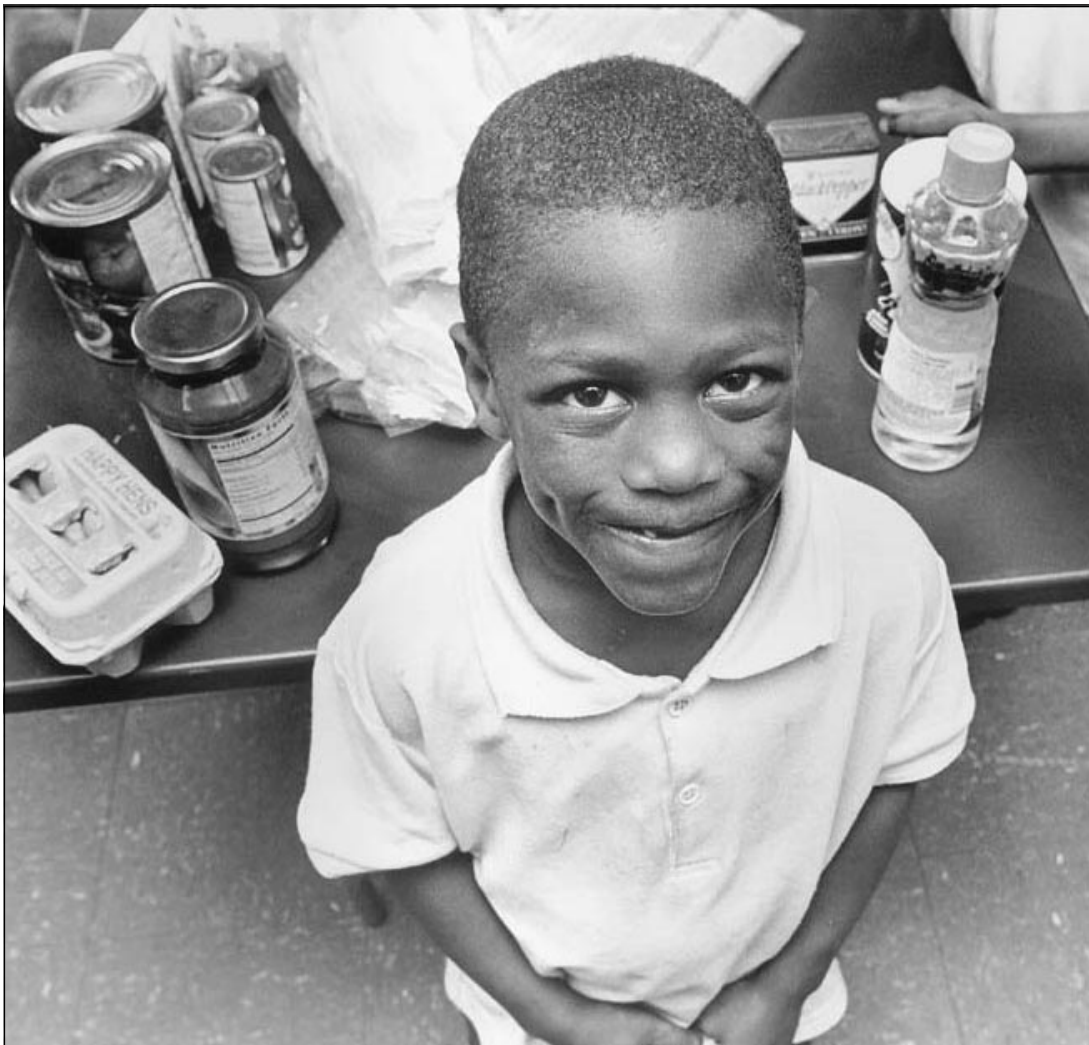
Corporate and foundation partners in California include Bank of America, 4-H Foundation of California, IBM, Kaiser Permanente, Pacific Gas and Electric, Pacific Telesis, Unocal and Wells Fargo Bank.

ASAP's success in Los Angeles has generated national recognition and serves as a model for programs nationwide. In 1995, HUD gave Oakland, Kansas City and Philadelphia \$1 million each to begin 4-H ASAP programs. HUD provided an additional \$500,000 to expand the program in Los Angeles.

In 1996, 4-H ASAP was one of eight winners of a national Community Solutions for Education award. The Coalition on Educational Initiatives, sponsors of the Community

Solutions for Education awards, cited 4-H ASAP for uniting the community in support of education to meet a critical need; encouraging the sustained cooperation of the community; and for serving as a model for other communities. In addition, ASAP won an award from the Pacific Research Institute for Public Policy in its privatization competition, "Beyond the Welfare State: Celebrating Private Initiative in Social Service."

Mendenhall, the site coordinator at Imperial Courts, says the program helps shelter children from the problems of the neighborhood. "I want them to explore, dream and get a vision of maybe leaving here one day," she says.



The 4-H After School Activities Program serves 1,200 children in Los Angeles and 100 children in Oakland.



Medical students share a passion for science

In a sixth-grade class at Hoover Elementary School in San Francisco, students study the five senses. Pieces of candy, potatoes, apples and onions help demonstrate taste. When students shut their eyes and pinch their noses, they have no sense of taste.

This series of exercises for the class of first-year teacher Kathy Gilliland was devised by UC San Francisco medical students who volunteer in a program called MedTeach.

Geoff Criqui, the MedTeach team leader, used optical illusions in a lesson on sight. Other team members, Greg Ku and Esthimios Laios, used an oversized plastic model of an human ear to explain how the ear works.

Health

MedTeach, a program of UCSF's Science and Health Education Partnership (SEP), sends volunteer teams of first-year medical students into sixth-grade classes in San Francisco to teach hands-on health and science.

UCSF students work with SEP coordinator Helen J. Doyle, who assists in preparing lesson plans and in coordinating the program with schools.

MedTeach, founded in 1987, attracts 30 to 40 first-year students a year. Four or five UCSF students make up each team, which targets sixth graders because their science curriculum addresses the human body.

MedTeach teams are currently in six San Francisco public middle schools. And demand is growing. For instance, 28 teachers at 14 middle schools vied for the services of one of only six teams.

Student volunteers use the campus Science and Health Education Partnership resource center to borrow teaching aids — brains, hearts and other human organs, charts, dissecting kits and plastic torsos. When covering a subject like smoking, a MedTeach team may show students lungs that belonged to a non-smoker and lungs of a smoker to demonstrate damage caused by cigarettes.

Teachers say MedTeach is effective because students get individualized attention

from medical students and because the teams prepare demonstrations and presentations that are too difficult for a single teacher in a large classroom.

Because MedTeach volunteers are ethnically diverse young men and women, they also serve as role models. "They're younger than most of the teachers and the kids look up to them because they're in med school," says Gilliland.

Med student Esthimios Laios says students learn more effectively because lessons are interactive. The sixth graders "are exposed to (medical) terminology, but they don't know how the pieces fit together. Like how do these three bones, that they've memorized the names of, actually conduct sound? We went through that with them, in an interactive way."

Says MedTeach volunteer Eric B. Meyers, "We want to make it fun and educational at the same time. I don't expect them to take home every message. But if it sparks an interest, maybe it will be a positive experience for them and they'll consider science as a career."

For volunteers, MedTeach is an opportunity to share their medical knowledge and possibly instill a greater understanding of science.

Says volunteer Greg Ku, "It's nice to have an opportunity to share my love for science with these kids and hopefully inspire some of them."



MedTeach brings hands-on science to sixth graders.

Other UC programs

■ Home care: UCSF's Home Care Program sends nurses, therapists, social workers, nutritionists and home health aides on house calls for the home-bound including the elderly and mothers with newborns.

■ Doctors Ought to Care (DOC): Medical students at UC San Diego go to elementary, junior and high schools to talk about alcohol and drug abuse and other health issues.

■ Saturdays for Science: Faculty at UC Irvine give lectures and demonstrations to students in fourth through sixth grade.



Medical students run inner-city clinics

Camilla Munoz arrives early at Clinica Tepati Saturday morning and already a line has formed. Although the health clinic doesn't open until 9 a.m., some patients have been waiting since 6 a.m.

"They're trying to make sure they're seen," explains Munoz, co-director of the student-run, nonprofit Tepati Clinic and a third-year UC Davis medical student.

In the Washington barrio of downtown Sacramento, the clinic offers free primary care to about 20 patients every Saturday. It's staffed by UC Davis medical students who are supervised by volunteer physicians from the medical school and the community.

For its clientele, who are uninsured and non-English speaking, Clinica Tepati is a clinic of last resort. Many patients work during the week and can't get to other clinics. Others can't afford care.

Health

“We treat them with respect,” Munoz says. “For many patients, if they didn’t come here, they wouldn’t be getting health care.”

UC Davis undergraduates, many who are pre-med students, act as patient advocates, receptionists, interpreters and lab workers.

The clinic, established in 1974, is one of three in Sacramento operated by students from the UC Davis School of Medicine. The medical school, with 1,100 students, is the only UC medical school with clinics run by student-governing boards.

All three clinics are open on Saturdays only. Medical students, typically in their first or second year, and undergraduates who staff the clinics receive course credit. At least two volunteer licensed physicians supervise the students.

Clinic services include diagnosis and treatment of diabetes and hypertension, pregnancy testing and other women’s health services, immunization and physical exams for school-age children and flu shots.

The clinics serve distinct communities with culturally sensitive health care, says Lindy F. Kumagai, a professor at the Davis medical school. And the experience benefits students as well as patients, he says.

One of the three student-run clinics is the Paul Hom Asian Clinic, founded in 1971 and believed to be the oldest Asian free health clinic in the country. Located in the New Helvetia housing project in downtown Sacramento, it serves a mainly Asian population, many who are elderly.

Kumagai came to Davis from the University of Utah in 1969 and volunteered as the

licensed physician in charge of the Asian clinic when it was founded by activist Asian-American students from California State University-Sacramento. Kumagai recruited help from UC Davis medical students.

The third and newest student-run facility is the Imani Clinic, founded three years ago in Sacramento County’s Oak Park Health Center, serving a primarily African-American population.

Munoz says medical students take time to explain to patients their drug regimen, such as treatment for diabetes or hypertension. “It’s an educational process . . . to make sure they understand that it’s a long-term condition.”

Often, in a hospital or emergency room, there’s little time for an explanation by a physician, she says.

Munoz’s experience at Clinica Tepati has reinforced her belief in culturally sensitive, community health care. “I want to serve a population that really needs my help,” she says.

In fact, many students who work in the community clinics choose primary care specialties when entering residency training, says Kumagai.

Dr. Robert Davidson, former chair of the family practice department at UC Davis who has volunteered at Clinica Tepati over the last two decades, says, “For the students, particularly our minority students, it (volunteering) keeps them grounded as to why they went into medicine in the first place.”

Davidson also notes that the clinics survive because of student dedication. “They would never have lasted without the students,” he says.

At a glance

■ UC operates the largest health science and medical training program in the nation with more than 12,000 students enrolled in medicine, public health and other health professions.



■ California residents make more than 1.9 million visits to UC medical center clinics annually.



■ UC medical clinics employ more than 20,000 Californians.



■ UC’s five medical schools educate about 2,600 medical students a year or nearly two-thirds of all California medical students.



Rare photo collection brings history alive

While viewing turn-of-the-century, three-dimensional photographs, film maker Stephen Low saw his future.

The photographs were made from glass negatives of rare antique stereoviews, part of an extensive collection that spans more than a century of photographic history at UC Riverside's California Museum of Photography.

The 3D stereoptical photographs or stereographs were popular in the United States and Europe in the late 1800s and early 1900s. They were made with a special camera equipped with two lenses that produced two views of the same image, one tilted to the left, the other tilted right. When viewed with a hand-held, wooden stereopticon viewer, they created a 3D image. In its time, the viewer provided popular parlor entertainment.

A stereoview of New York's Central Park in the 1800s (above) is among the museum collection.

Arts

The stereoptic photographs were key to making “Across the Sea of Time,” an IMAX 3D film that celebrates the story of the immigrant and the city that was their gateway, New York. The film was directed and produced by Low and written and produced by Andrew Gellis. IMAX, a Canadian company, created the technology that allows filmmakers to produce a film in a format that is three times larger than the normal 70 mm format.

Juxtaposing 100 of the museum’s stereoptic photos of New York City with state-of-the-art IMAX 3D images of these locations today, “Across the Sea of Time” tells the story of an immigrant boy who comes to New York, following the footsteps of an ancestor who immigrated to America 80 years earlier. The boy visits the sights — the Empire State Building, Central Park, Coney Island, Little Italy, Broadway — guided by photographs his ancestor sent to the old country.

The 50-minute film, from Sony Pictures Entertainment and Sony New Technologies, premiered in New York in October 1995. Its West Coast premiere was in Irvine and it has since been shown in several U.S. cities and in Canada, Europe and Japan.

As a large-format film, “Across the Sea of Time” is projected onto a six-story-high screen. Viewers wear a light-weight headset that supplies sound and that has an infrared signal to receive sound from the theater speaker.

The California Museum of Photography’s Keystone-Mast

Collection comprises 250,000 stereoscopic negatives and 100,000 prints (collectively weighing 27 tons), representing the world’s largest collection of stereoviews. The collection, with images made from the 1870s to 1940s that depict the great cities of the world, is the archive of the Keystone View Co., the turn-of-the-century’s top distributor of stereoviews.

The genesis for “Across the Sea of Time” was Sony New Technologies’ desire to produce a large-format film with New York as the setting. It sought a film that would be the ultimate New York experience, that could serve as a permanent presentation at the new Sony Lincoln Square in New York and would tell a story sufficiently entertaining to be shown at other large-format theaters.

Low had been in search of good 3D negatives of New York when a friend told him about the Keystone-Mast Collection.

Using original glass plate negatives, the decades-old photographs were transferred to the IMAX format with enormous fidelity. Low was quite moved when he saw the result.

“These tiny, little images . . . were suddenly life-size,” says the Montreal-based film maker. “There were images of beautiful, young people staring you in the eye, people who had long ago lived out their lives and disappeared without a trace except, of course, for these pictures.”

Gellis, the writer and producer, says he was astonished at the distinctness and power of the photographs after they were transferred to IMAX 3D.



Peter Reznik plays an immigrant boy in “Across the Sea of Time.”

At a glance

■ UC offers thousands of arts and cultural programs ranging from concerts to museum exhibits.



■ UC educates hundreds of artists ranging from author Maxine Hong Kingston to film director Francis Ford Coppola to cartoonist Scott Adams.



■ UC Press is the largest publishing arm of any public university in the United States, publishing 180 new clothbound books, 90 paperback books and 30 scholarly journals.

Arts



On the set of “Across the Sea of Time,” a film crew shoots the Manhattan skyline.

“These pictures have an emotional quality to them, a resonance — as if the photographer has brought you back in time and you are there at the moment when the photograph was snapped,” Gellis says.

Jonathan Green, the UCR photo museum director, says “Across the Sea of Time” is the first major use of the collection in a motion picture and it’s expected to generate similar projects. They include Low’s next project, another IMAX film that will be a documentary on Mark Twain.

At a time when the arts are looking for additional support, the films are a way for the museum to generate revenue by licensing part of its collection, Green says. In the case of “Across the Sea of Time,” the museum also receives fees from the sale of film merchandise such as t-shirts, caps and coffee mugs.

“It’s a wonderful opportunity to show what makes our collections special and gives people a sense of their power and evocative quality,” Green says.

Other UC programs

■ **Shakespeare Santa Cruz:** The award-winning nonprofit theater company at UCSC rethinks great plays of the past and presents them as contemporary theater.



■ **On the Road:** UC Davis Presents, which stages campus cultural performances, takes visiting artists, including the Alvin Ailey American Dance theater and musician Wynton Marsalis, to Sacramento-area schools.



■ **Lecture Series:** The University Art Museum at UC Santa Barbara provides an art lecture series for students in the public schools who have learning and physical disabilities.



Youngsters gain confidence, skills through art

Through UC Irvine’s ArtsBridge program, Orange County students are rising to the challenge of music, dance and photography.

ArtsBridge — the brainchild of Jill Beck, dean of UC Irvine’s School of the Arts — sends UCI students into Orange County public schools to teach the arts. Only a year old, the program is lauded by schools as well as university students who participate.

Jay Loudon, who is earning a master of fine arts (MFA) in directing at UCI, and John Patton, an MFA student in design, were the first ArtsBridge scholars to have a project up and running, teaching drama to fourth- and fifth-graders at Santa Ana’s Heninger Elementary School.

Loudon, 42, a former actor and teacher, says he saw many changes in children after a drama class, in which they learned new vocabulary, wrote dialogue, worked on improvisation skills and designed sets, props and costumes. He recalls a boy, a loner who over two months of ArtsBridge “became part of the group and excelled.”

Even a class cut-up, a boy who sat at the desk for troublemakers, got involved. Louden was working with a class to devise a safe and simple way to have smoke come from the nostrils of a fairy-tale dragon. “He (the boy) said, ‘Slap two blackboard erasers together,’” Louden recalls. “It was a brilliant idea and creative problem-solving.”

Those little surprises were especially satisfying, says Louden, who was an ArtsBridge scholar for two quarters. “The experience made me feel that I made a difference in someone’s life. That’s a gift to me.”

Beck, dean of the arts school, brought the idea of ArtsBridge to the campus from the Julliard School in New York where she had worked for eight years before joining UC Irvine in 1995. At the noted music academy, students became scholars-in-residence in convalescent homes and community centers and received tuition support.

To become an ArtsBridge scholar, a UCI student must write a proposal that is reviewed by a School of Arts committee. If the idea is accepted, students are awarded scholarships of \$500 to \$1,500.

ArtsBridge has received more than \$125,000 from donors and is actively seeking additional support. “We would like to endow this program so it’s not a constant fundraising activity,” says Beck.

At UCI, the program was launched with nine scholars in spring quarter 1996 and has grown to 33 scholars. “We had proposals from 65 students,” says Keith Fowler, ArtsBridge director and a UCI associate professor of drama.



ArtsBridge encourages teamwork.

Beck believes arts education is fundamental to teaching students the broader lessons of critical thinking, persistence and communication.

Arts have been eliminated from the curriculum of many schools because they’re seen “as frills, not essential to learning, not essential to the quality of life and certainly not essential to the state economy,” says Beck. “That is simply no longer true. The economy is at the point where art is a very necessary subject.”

Beck says, “The new engine driving the California economy is the arts industry, specifically multimedia and the entertainment industry.”

There is such demand for computer graphic artists in California that most firms in the industry recruit overseas since they can’t find artists here who are capable of producing sophisticated visual compositions on computers, she says.

Students aren’t likely to pursue careers in fields like multimedia or other visual arts unless they are exposed to arts education and technology, Beck says.

And through ArtsBridge, teachers say students develop skills that help them in all their school work.

Kathleen Sabine, principal of Heninger Elementary School in Santa Ana, has had several ArtsBridge scholars working with her students, who are almost all Latino, non-English speaking or have limited English proficiency. Programs have included drama, flamenco dance, guitar and photojournalism.

ArtsBridge, Sabine says, “draws the child into the learning and makes them want to explore it and talk about it.”

Public schools



After-school program teaches through games

For 10-year-old Nellie Ortega, La Clase Magica (the Magical Class) in Solana Beach is a place to go after school to play computer games with friends and sometimes a UC San Diego student. It's a setting that's fun and challenging.

But it's more than play. Ortega is part of an experiment in collaborative learning. And in the process, she's preparing for college.

La Clase Magica is part of a UCSD project called the 5th Dimension, which helps children learn perseverance, problem solving and teamwork via computer games and telecommunications.

Computers play a key role in learning in the 5th Dimension program (above).

Public schools

“It’s a sophisticated mix of learning and play,” says Katherine Brown, a scientist with the Laboratory of Comparative Human Cognition at UC San Diego, which helped create 5th Dimension. “We’re extending the educational content of their day, but not making it feel like school.”

Partners in the program are community groups in Solana Beach, UC San Diego researchers and UCSD undergraduates. Besides La Clase Magica at St. Leo’s Catholic Church, participants include the Boys and Girls Clubs and Skyline School, both in Solana Beach.

About 30 UCSD undergraduates are involved and receive academic credit for their work. They’re required to read and critique scholarly articles on basic child developmental principles, to be familiar with the use of new technologies for organized learning and to write and analyze clinical field notes on their interactions with the children.

Based on the success of 5th Dimension, UC President Richard C. Atkinson has encouraged other UC campuses to replicate the program through a network of educational partnerships called UC Links.

Michael Cole, a UCSD professor of communications and psychology, developed 5th Dimension after studying the underrepresentation of women and ethnic minorities in science and mathematics. He found several programs providing opportunities for underrepresented students, but they had problems, typically because of funding.

So Cole looked for a model with staying power. He chose facilities such as Boys and Girls Clubs because they were established and had a steady clientele. 5th Dimension offered an educational activity at little cost.

5th Dimension is characterized by a mixture of play and learning. The computer games that make up the curriculum are based on a make-believe activity system, involving a “wizard,” an authority figure, friend and guide who lives on the Internet (the wizard is loosely based on the referee in the role-playing Dungeons & Dragons game, who monitors plays and upholds rules).

Via e-mail, children communicate with the wizard, whose identity is a closely guarded secret. No one knows whether the wizard is one or several people and whether they are communicating with a woman or a man. Children often write to the wizard about their accomplishments or to offer complaints or suggestions.

Besides e-mail, the children use computers to participate in “live” chats twice a week with 5th Dimension participants at other sites and to access the World Wide Web.

Lourdes Duran, who first encountered La Clase Magica in 1989 when her children attended the program, now is a site coordinator.

Key to the program, she says, are the motivated undergraduates, she says. “The conversations with the UCSD students gets the children thinking that they can one day go to the university,” Duran says.

At a glance

■ UC provides more than 800 academic, counseling and outreach programs for students, teachers and administrators in California public schools, from kindergarten to the 12th grade.

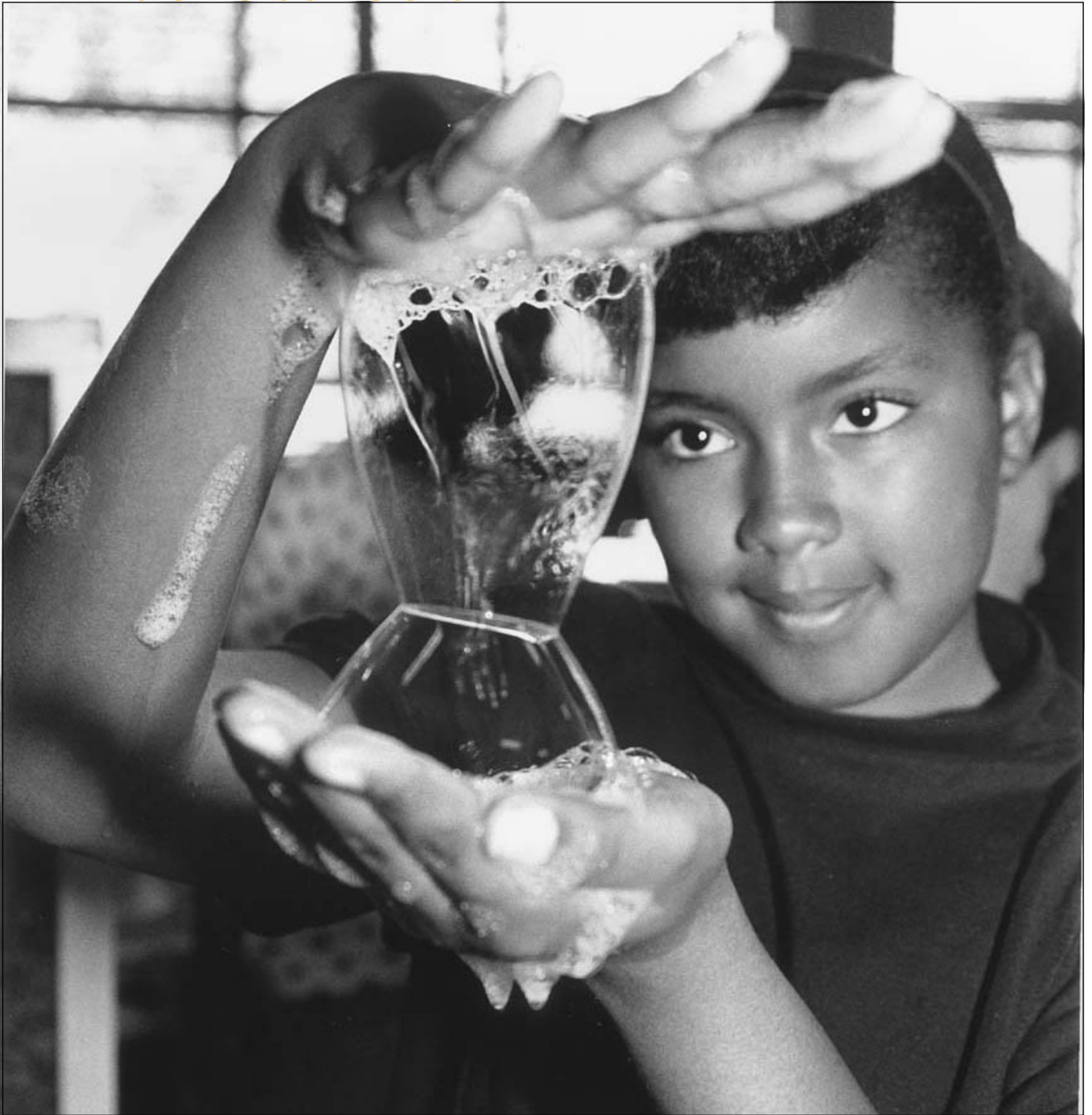


■ UC receives more than \$100 million from state, federal and private sources for programs that benefit California’s public schools.



■ More than 65,000 public school teachers benefit annually from UC teacher training and career development programs.

Public schools



Hands-on learning overcomes fear of science and math

Elementary and middle school students at the Fresno Metropolitan Museum of History and Science study “bubble-ology” to learn about aerodynamics, math, chemistry and physics. They experiment with glycerin to produce the biggest bubbles and predict, by observing color changes, when a bubble will pop.

Topics such as “bubble-ology” (above) are used to teach science and math.

Public schools

At the museum's Children's Science Center, students get hands-on training in math and science through GEMS, or Great Explorations in Math and Science, a program of the Lawrence Hall of Science at UC Berkeley.

The GEMS program was founded in 1984 to adapt and distribute the curriculum developed at the Lawrence Hall to teachers nationwide and establish a formal training program. A \$300,000 grant from the A. W. Mellon Foundation was matched by one from the Carnegie Corporation of New York for writing and testing of guides and the development of workshops.

Today, more than 500,000 teachers and 6 million students have participated in GEMS. There are more than 50 guides and handbooks. Proceeds from the sale of books help fund the program.

The GEMS program takes teachers and students — from preschool to the 10th grade — beyond text-

books and into what's called "activity-based" learning, a technique that has become the hallmark of the UC Berkeley science museum. Lawrence Hall researchers develop teacher guidebooks and workshops, tested and refined in thousands of classrooms nationwide.

Lessons developed include one called "Group Solutions," designed to help children in kindergarten to fourth grade work together to solve problems. Each student, working in groups of four, receives a clue to help solve a problem. The group solves the problem by putting together the four clues.

Another lesson, titled "Oobleck: What do scientists do?," involves producing a green, slimy substance from

cornstarch, water and green food coloring. The substance has a consistency that will pour out of a bowl, but feels solid when touched. Students are told that the substance is from outer space. As scientists, they design a spaceship to land on it.



Activity-based learning is the hallmark of GEMS.

Public schools

In other activities, students observe chemical reactions of substances in “zip-lock” plastic bags and learn about acid rain and the greenhouse effect.

In addition, GEMS receives support from corporate sponsors such as McDonnell Douglas, Hewlett-Packard, Chevron and Shell as well as from science associations and the National Science Foundation.

The Fresno museum, known locally as “the Met,” is one of three centers in California, including the Lawrence Hall, that offer *intensive* teacher training in GEMS curriculum, using low-cost, commonly found materials. The other California center is at the Huntington Beach Teachers Center. In addition, there are 16 other GEMS facilities from Arizona to New York, including one in the Los Angeles Unified School District, where training is less extensive than at the centers.

The Met and the Fresno County Office of Education are partners in operating the GEMS center, founded more than five years ago when they made a three-year commitment to provide comprehensive teacher training with a grant from a local donor.

A team of science educators from the Lawrence Hall traveled twice a year to the San Joaquin Valley to

train teachers who then train their colleagues throughout Fresno County.

Local teachers are selected by districts to attend GEMS workshops. Once they complete their training and are certified as GEMS “associates,” they give in-service instruction to other teachers in the area. Publications and materials are available at the museum bookstore and the Fresno County Office of Education.

The Fresno center has evolved from a small core group of teachers into a regional network, including a national testing site for the instructional materials and activities.

Carolyn Willard, Lawrence Hall coordinator of GEMS centers, said the Valley’s diverse communities, ranging from urban to rural, and its diverse mix of cultures and languages makes it an ideal location for fine-tuning the instructional materials. For example, the Fresno Unified School District, the fourth largest school district in California, has 80,000 students representing over 90 languages.

The program, Willard says, is effective because it encourages students to pursue a problem or mystery, not just to find one “right answer.” And in many cases, GEMS activities help diffuse the fear teachers and students have toward science and math.

Other UC programs

■ **Hands-on Science:** In a partnership with the Santa Ana Unified School District, UC Irvine’s Kids Investigating and Discovering Science (KIDS) program brings lower-income, Spanish-speaking children in the fourth to ninth grades into campus science labs.



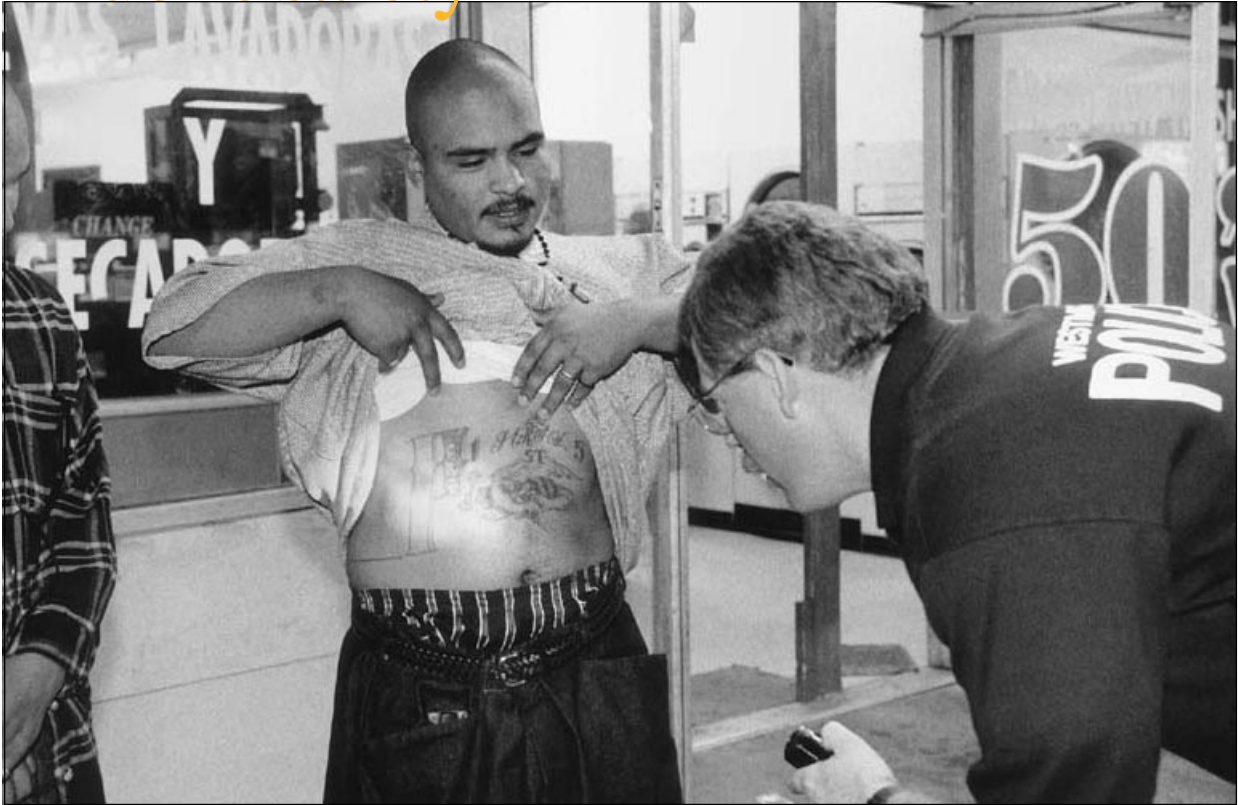
■ **Upward Bound:** Three Riverside County high schools participate in UC Riverside’s Upward Bound program to help students from low-income families develop the skills necessary to succeed in college.

■ **School Collaborations:** The Center for Cooperative Research and Extension Services for Schools at UC Davis supports long-term collaborations with public schools to improve elementary and secondary education.



■ **Hands on Universe:** This education program of Lawrence Berkeley National Laboratory enables high school students worldwide to request observations from an automated telescope and download images to computers as part of a math, physics and astronomy curriculum.

Public safety



UC researchers join effort against gang crime

Westminster Police Chief James Cook thought long and carefully before asking for UC Irvine's help on gang research. "Yes, it was difficult," he says about discussions with Orange County police chiefs and the county sheriff. "We didn't know if we wanted to open ourselves to this kind of scrutiny."

But all the county's law enforcement officers agreed that they needed a thorough study of programs and methods to find ways to improve. In an unprecedented move, the countywide gang strategy steering committee, which Cook chairs, approached UCI Chancellor Laurel L. Wilkening in early 1995 for help from UC criminologists to analyze gang activity and law enforcement's response.

With the support of the chancellor, Bryan Vila and James Meeker, professors in the criminology, law and society department of UCI's School of Social Ecology, joined police in this unconventional alliance.

A Westminster police officer (above) checks a man's tattoos during a field interview.

Public safety

Vila, a former Los Angeles policeman for nine years where he encountered gangs in East Los Angeles, says the cooperative effort is unusual because police rarely share information with outsiders. “But this is an unusually progressive group of police chiefs here.”

Approaching the issue regionally, researchers established a gang incident tracking system to analyze gang activity reports from 22 Orange County police agencies. They study where and when gangs are active, how police agencies identify a gang crime and how the perception of gang activity among residents affects their quality of life.

Cook describes the tracking system as “the first attempt in the United States to systematically measure the extent of gang crime in the community” and “the single most valuable tool in our struggle to control and contain gangs.”

After working with a series of small grants, the project hit pay dirt when the county law enforcement chiefs won a \$1 million grant from the U.S. Department of Justice in April 1996. About \$280,000 will fund UCI criminologists, who employ four graduate students to assist in research, including observing police patrols.

Orange County, with a population of 2.7 million, is home to 20,000 active gang members, says Cook. “That puts us in the top five or six in the nation.”

There were a few Latino “turf” gangs prior to the 1980s, but gang activity has increased in

the past decade, say UCI researchers. With the emergence of Asian gangs and white “skinhead” gangs, gang crime has become more frequent and more violent.

In response, police agencies in the early 1990s joined with schools, local government, community groups and businesses in a three-pronged strategy that includes the gang incident tracking system. The second effort is Project No Gangs, an education program in schools and the community to fight the influence of gangs. And the third effort is the Tri-Agency Resource Gang Enforcement Teams or TARGET, a program of eight cities involving law enforcement, probation and prosecution staff to target gang leaders and repeat offenders via surveillance and prosecution.

The federal grant will allow researchers to “evaluate how these three treatments work,” says Vila. “We will look at: How are the cops measuring gangs? How does an officer on the street identify who is a gang member and what is a gang incident? Not just on paper, but what are they really doing out there?”

Like a business audit, the research will help police and the sheriff department improve operations regarding gang crime, Vila says.

But even more important, he says, is that “we’re trying to measure how fear of crime and fear of gang crime affects people in the county. People’s safety and the way they go about their everyday lives could be enhanced by this study.”

Other UC programs

■ **Community Patrol:** The University/Neighborhood Enhance Team in Riverside includes five UC Riverside police officers and five city police officers who work together against graffiti, vandalism and drug dealing in targeted areas.



■ **Violence Prevention:** UC San Francisco faculty and medical residents participate in the San Francisco General Hospital’s Violence Prevention Task Force, which works with community agencies to help victims of violence.

■ **Web Site:** A UC Davis professor in environmental design maintains a site on the World Wide Web, titled “A Street Guide to Gang Identity” that is a reference for police and counselors nationwide.





UC scientists heal the environment

Often unknowingly, Los Angeles residents are making the Santa Monica Bay sick with motor oil, antifreeze, paint and pesticides that leak or are dumped into storm drains flowing directly into the bay.

To combat this assault, a pair of professors at UCLA are working with students to prevent this pollution and cleanup the chemicals already there. Michael Stenstrom, a professor of civil and environmental engineering, and Irwin Suffet, a professor of public health, are identifying pollutants, developing better disposal practices for these chemicals and working to increase public awareness to reduce inadvertent dumping of chemicals into the bay.

Throughout California, UC professors such as Stenstrom and Suffet are tackling environmental problems. Their work is carried out in departments ranging from sociology and biology to public health and public policy. It takes place in bays, mountains, desert and cities.

At UCLA, much of the work is conducted through research centers, such as the Center for Clean Technology, Center for Occupational and Environmental Health, Center for the Study of the Environment and Society and Institute of the Environment.

Students (above) take water samples to monitor chemicals, paint and other contaminants.

Public safety

Stenstrom became interested in this work in the late 1980s as a volunteer, advising a public interest group called “Heal the Bay.” The group succeeded in convincing municipal agencies to build sewage treatment plants rather than discharge sewage into the bay. That experience led to Stenstrom’s research on bay restoration.

Early achievements of local environmental groups include placing signs on storm drains to alert residents that drains flow directly into the ocean. They also organized hazardous waste “round-ups” to reduce chemical dumping into storm drains or into garbage, which pollutes landfills.

From the start, environmental groups used Stenstrom’s research to convince government agencies to reform practices that caused pollution or obtain funding for cleanup projects.

Today, Stenstrom and his colleagues are exploring innovations such as pollution control devices that screen debris in storm drains or absorb oil and other chemicals that run off freeways after it rains.

To identify harmful chemicals, Stenstrom and Suffet have studied samples from drainage systems that discharge into the ocean. Major sources of contamination are motor oil and grease, spills from gas stations and chemical discharge from vehicles. Now, they’re tracking the sources.

Stenstrom believes that auto salvage yards are a culprit. Salvage yards cover an average 20 acres and

are covered with old cars. Because many old vehicles used leaded gas, their mufflers and tail pipes are full of lead particles. When it rains, chemicals from these old cars flow into city drains.

The problem could be remedied if salvage yards drained old cars of toxic fluids, such as brake and transmission fluids and antifreeze as well as removed lead particles from pipes. Stenstrom and his colleagues are looking for ways to clean up cars at a reasonable cost.

Meanwhile, Stenstrom and his colleagues have solved other problems. At Lake Arrowhead, in the mountains east of Los Angeles, a team led by Stenstrom developed a pilot treatment plant that processes waste water and transforms it into drinking water, which now flows back into the lake.

The surrounding community draws its drinking water from the lake, which had been nine feet below normal during a recent drought. “If the drought had continued, the community would have faced a water crisis,” Stenstrom says.

The four-year project, funded by a \$700,000 grant from the Ahmanson Foundation, developed technology that could prevent a water shortage.

“We’re definitely having an impact,” Stenstrom says. But for the long term, pollution prevention, not expensive cleanup, is the answer, he says.



Michael Stenstrom

At a glance

■ UC campuses, including Berkeley, Davis and Irvine, offer programs in criminology, social ecology and social welfare to help make California a safer place to live.



■ Los Alamos National Laboratory in New Mexico works with Native American tribes at three nearby pueblos to monitor soil and air quality and to ensure their public health.

■ UC engineers have dozen of programs to help government and private developers build safer buildings and highways, particularly those that are vulnerable to earthquakes.

Neighborhood service



UC programs recruit lifelong volunteers

When Jennifer Hawes enrolled at UC Santa Barbara, she envisioned becoming a journalist. But volunteering through the campus Community Affairs Board in programs such as the Special Olympics and a homeless food drive changed the course of her life.

Today, Hawes is a program manager for the Jane Addams Hull House Association in Chicago, which annually serves 35,000 disadvantaged Chicagoans with services such as housing, employment and economic development.

“The Community Affairs Board opened my eyes to how people can contribute to their community,” says Hawes, a 1994 UCSB graduate who has applied to a Ph.D. program in social work at the University of Illinois. “It influenced the path I chose to take.”

The student-run Community Affairs Board (CAB) promotes community service through a volunteer center, which provides a database of 300 nonprofit agencies seeking volunteers and offers resources, advice and help in designing volunteer programs. At its foundation, students get experience in nonprofit management.

Students help senior citizens (above) as part of volunteer work.

Neighborhood service

For students, CAB supplements course work, helps them explore possible careers and helps them connect with the community.

About half of UCSB's 18,000 students volunteer, making the Community Affairs Board one of the largest student volunteer organizations in the country.

"CAB is the bridge between the agencies and students on campus," says Kristen Parisi, 21, the organization's 1996-97 co-chair.

Chip McCormick, 21, a senior and another co-chair, says, "There's a culture at UC Santa Barbara of getting involved."

Throughout California, UC students volunteer in their communities. In fact, a first-ever survey of UC Berkeley seniors, released in 1996, found that two-thirds of them performed community service.

Through Santa Barbara's CAB, volunteer opportunities are offered at retirement homes; youth and child care centers; the Santa Barbara County Probation Office and Legal Aid Foundation; hospitals and medical clinics such as St. Francis, Goleta Valley and Cottage hospitals; and the Santa Barbara County Animal Shelter and Santa Barbara Zoo.

There's administrative work in the offices of the Alzheimer's Association, Stop AIDS Now, Santa Barbara Festival Ballet, UCSB Art Museum and the mayor and city council.

In 1993, UCSB students voted to assess themselves \$1.15 each quarter for CAB, tripling its budget. The organization subsequently

founded its foundation, which receives 15 percent of CAB's operating income.

The foundation, which issues grants of up to \$500, solicits community service proposals from students and nonprofit organizations that recruit student volunteers. Recent grants were awarded to the Student Health Service Peer Health Groups to buy a button-maker for advertising, the U.S. Bodyboarding Club to advertise an environmental fair and surf competition and Nu Alpha Kappa to expand its mentorship and tutoring program at an elementary school.

As a sophomore, Jennifer York helped organize the CAB foundation. The experience, she says, had a lasting impact. After graduating in 1996, she joined the Big Six accounting firm, Coopers and Lybrand, where she specializes in auditing foundations and nonprofit organizations.

"It's exciting to bring these two worlds (accounting and community service) together," she says.

David Titus, who runs a venture capital firm in San Diego, remembers when he was CAB co-chair in the mid-1970s. "Being co-chair of CAB provided me the greatest management experience, trying to motivate people when I had no power of a paycheck because they were all volunteers," he says.

To promote volunteerism, Titus has given the campus a total \$10,000 since 1990 to fund annual scholarships to four or five outstanding student volunteers. "It's my way of encouraging students in volunteer activity," he says.

Other UC programs

■ **Field Study:** Social science students in UCSC's Field Study provide more than 100,000 hours of public service through programs such as community studies, psychology and environmental studies.



■ **Student Designs:** UCLA architecture students helped design the visitors center at Point Mugu, a wetlands in the Santa Monica Mountains, as part of a project involving the National Park Service and others.



■ **Community Outreach:** About a third of the 6,700 employees at Lawrence Livermore National Laboratory volunteer for nonprofit and government organizations. The lab notifies employees of volunteer opportunities through its employee newsletter.

Neighborhood service



UC helps build a sense of community pride

Parks and open space are a precious asset to a community. And no one knows this better than the residents of Oakland's Fruitvale neighborhood.

While residents of the nearby Oakland Hills each have an average three acres of open space, Fruitvale's 35,000 residents each have less than half an acre, says Sylvia Rosales-Fike, director for programs development of the Spanish-Speaking Unity Council in Oakland. "It's a typical case of the ill distribution of natural resources."

What exacerbates the problem is that the densely populated, economically depressed Fruitvale has one of the city's largest populations of residents under age 18 — a third of the community. Moreover, a recent survey found that many parents believe the lack of recreational facilities and programs contribute to the neighborhood's juvenile crime.

UC is working in East Oakland's Fruitvale area (above) to revitalize the community.

Neighborhood service

With a landmark \$2.4 million federal grant, Fruitvale residents, Oakland city officials and UC Berkeley graduate students and faculty are working to expand and improve Fruitvale's parks and recreation. First up is the redesign and reconstruction of Sanborn Park in the heart of the neighborhood. The project is one of about a dozen aimed at revitalizing low-income areas of Oakland.

Called the UC Berkeley/Oakland Joint Community Development Program, the effort will "help institutionalize stronger relationships between the university and Oakland," says Judith Innes, director of UC Berkeley's Institute of Urban and Regional Development who is heading the project.

Frequently, universities forge close relationships with adjacent neighborhoods or areas in which they own property. But this project is different. "In this case, UC Berkeley is working in Oakland where it has no direct interest. The university is making a commitment to building the community," Innes says.

Besides Fruitvale, the project, spearheaded by the UC Berkeley Institute of Urban and Regional Development, targets two other Oakland neighborhoods.

The grant from the U.S. Department of Housing and Urban Development provides funding — roughly half of the grant — for construction of facilities such as the park, the purchase of computers for libraries and community centers and improvements to commercial and residential properties.

The \$2.4 million grant will be matched by community organizations, the city of Oakland and UC Berkeley, says project director Victor Rubin.

UC Berkeley was one of five universities nationwide to receive a HUD grant with partner cities. The program builds on work completed during the past decade by the campus, the city of Oakland and Oakland neighborhood groups.

The project involves faculty and students from several campus departments who provide community groups and city agencies with expertise and training, technical assistance and design and other services.

Faculty and students in urban planning and architecture are revitalizing commercial districts. Civil and environmental engineers are training contractors to rehabilitate and sell vacant homes and library scientists and computer specialists are installing computers in libraries and other community facilities to provide residents access to e-mail and the World Wide Web.

In addition, graduate students from the business school are providing management assistance to nonprofit organizations.

Rubin believes the project is as valuable to the campus as it is to the community. "We learn as much as we contribute in the process," he says.

He hopes that public resources will attract the private sector to help neighborhoods become economically viable.

Rosales-Fike believes that the construction of parks and senior citizen centers and housing improvements are "part of an integrated strategy that will result in a new community in 10 years." Someday, "it's going to be a source of pride for people to say, 'I live in Fruitvale,'" she says.

At a glance

■ Thousands of UC students, faculty and staff contribute hundreds of thousands of volunteer hours to communities through campus programs. At UC Davis alone, more than 4,000 students volunteer in programs from community development to tutoring to drug abuse prevention.

■ UC graduates more Peace Corps volunteers than any university in the nation with almost 370 alumni now serving.

■ UC campuses help communities cope with cuts in military contracts and bases. UC San Diego, for example, holds Defense Conversion Roundtables to identify defense technologies that could be applied to new industries.