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UC SANTA BARBARA
TODAY

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THE COVER
Almost any view of the Sedgwick Reserve is inspiring. In addition to researchers, students, and schoolchildren, the general public, on selected dates, can also visit the property.

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COVER PHOTO: SUSAN JORGENSEN
Admissions Sees Gains in Academic Quality, Diversity

The campus has offered a place in its fall 2010 entering class to 19,721 high school seniors. The prospective freshmen were selected from more than 46,700 applicants — the second-largest applicant pool in UCSB history. Only one other UC campus — UCLA — received more applications than UCSB from California high school seniors. The campus expects its fall 2010 entering class to number about 3,900.

Both the academic qualifications and the diversity of the applicant class accepted continue to be at very high levels. Admitted applicants had an average high school grade point average of 4.10, up from 4.01 last year, and an average total score on the required SAT R Test of 1909 out of a possible 2400, up from 1877. Of all applicants admitted, 52.6 percent identified themselves as members of a racial or ethnic minority group — up from 51.8 percent last year. (Individual applicants to UC are not identified to the campuses by race or ethnicity until after admission decisions are made.)

According to Admissions Director Christine Van Gieson, admission to UCSB is becoming increasingly competitive. While in recent years around 50 percent of all freshman applicants were accepted, this year the figure was just 42 percent.

Almost half of all UCSB students commute by bicycle.

Campus Recognized as Bicycle Friendly

The League of American Bicyclists has named UC Santa Barbara a Bicycle Friendly Business Gold Award winner. The campus was among 51 new Bicycle Friendly Businesses recognized at the 10th National Bike Summit in Washington, D.C. this spring.

According to the bicyclists’ league, UCSB serves as an example for best practices and innovations in bicycle friendliness at the workplace. The campus promotes bicycling as a viable form of transportation and gives its employees choices and options that make biking to work easy and fun, the group said. According to campus statistics, 49 percent (10,215) of UCSB’s students commute by bicycle, as well as 9 percent (420) of the faculty and staff. The campus features seven miles of Class I bicycle paths and 10,000 secure bicycle parking spaces in bicycle racks.

Environmental Studies Marks 40th Anniversary

Earth Day and UC Santa Barbara’s Environmental Studies program have a common thread: They share the same parent. Both were born out of the frustration and anger that followed the infamous Santa Barbara oil spill in 1969. The Environmental Studies program celebrated its academic accomplishments and looked to the future of the field when it marked its 40th anniversary in April with a daylong symposium.

Chancellor Yang Heads Top Universities Group

Chancellor Henry T. Yang is serving as chair of the Association of American Universities this year, following his election last fall. The nonprofit organization represents 60 leading public and private research universities in the United States and two major Canadian institutions. Yang succeeded Princeton University President Shirley M. Tilghman in the one-year post.

The AAU, founded in 1900 to advance the international standing of U.S. research universities, today focuses on issues that are important to research-intensive institutions.

“We need to speak in a strong and clear voice about the importance of investing in higher education and research and to sustain and enhance the capacities of American universities,” said Yang.

Universities selected for membership in the prestigious association are national leaders in research and education. The 60 U.S. members award more than half of all U.S. doctoral degrees and 55 percent of those in the sciences and engineering. UC Santa Barbara was elected in 1995.

Graduate Programs Get High Rankings

U.S. News & World Report has rated seven of UC Santa Barbara’s graduate programs among the top 50 in the nation in its 2010 ranking of leading graduate and professional programs. Three UCSC programs were ranked in the top 25.

The graduate program in physics at UCSB was ranked number 10 by U.S. News, while the College of Engineering’s program was ranked at number 19, tied with Harvard. The other UC Santa Barbara program ranked in the top 25 was earth sciences at number 23.

Several areas that U.S. News

Committee on UC’s Future to Report Soon

The financial challenges facing California and the budget crisis gripping the UC system have sparked many responses, from petitions and protests to town hall meetings, teach-ins, and a commission on the university’s future. This year has seen higher fees approved for students (32 percent), pay reductions for faculty and staff (4 to 10 percent), program closures, downsizing, and a cloud of uncertainty hanging overhead. Many have urged an overhaul of the state’s 50-year-old Master Plan for Higher Education, calling it broken.

Among other actions, UC and the campuses have stepped up advocacy efforts. Chancellor Henry Yang has taken part in Sacramento sessions aimed at securing more support for UC, including major events in March and April.

Gov. Arnold Schwarzenegger has vowed to protect higher education funding, saying he would not sign any budget that does not include more money for higher education and Cal Grants. He has proposed a $224 million increase in general fund spending for higher education for the fiscal year that starts in July.

Meanwhile, the UC Committee on the Future is working to forge a vision that reaffirms UC’s role in sustaining California’s economic and cultural vitality while recognizing that limited state funding requires new strategies to carry out that mission.

Among draft proposals from the commission’s five working groups were ideas for increasing enrollment of nonresident students, creating a three-year undergraduate degree, establishing multyear fee schedules, and exploring more online instruction.

The commission is co-chaired by Regents Chair Russell S. Gould and UC President Mark G. Yudof. Four of the working groups are co-chaired by UCSC representatives: Chancellor Yang; Executive Vice Chancellor Gene Lucas; Cynthia Brown, a professor of French; and Jesse M. Bernal, the student regent.

The commission will present a first set of recommendations to the Regents in July, with a final report due in the fall.
defines as “specializations” in both physics and engineering (actually departments on our campus) were ranked even higher. In physics, condensed matter was ranked number 3, quantum at number 5, elementary particles/field/string theory at number 8, and cosmology/relativity/gravity at number 9. In engineering, materials was ranked number 4, chemical engineering at number 9, while electrical and computer engineering was number 17.

Other UCSB graduate programs that achieved national rankings from U.S. News were chemistry, number 33; computer science, number 35; mathematics, number 46; biological sciences, number 46; statistics, number 55; and the Gevirtz Graduate School of Education, number 79.

U.S. News did not update the rankings for graduate programs in the humanities and social sciences this year.

Construction Begins on Ocean Education Center

UCSB and the Channel Islands National Marine Sanctuary (CINMS) marked the first step in construction of the initial phase of the new Ocean Science Education Building with a groundbreaking ceremony on campus (see photo). Supported by federal funds, the building will house CINMS headquarters. Work on the project is now under way. The second phase, which will be made possible by private contributions, will include the campus’s Outreach Center for Teaching Ocean Science, a state-of-the-art educational facility. Participating in the event were, from left, Steven Gaines, Dean of the Bren School of Environmental Science & Management; Chancellor Henry Yang; Chris Mobley, CINMS Superintendent; Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere, and administrator of the National Oceanic and Atmospheric Administration; Michael Witherell, Vice Chancellor for Research; and Congresswoman Lois Capps.

Among the myriad activities of April’s All Gaucho Reunion was the annual Gauchos Gallop, a race to benefit the Alumni Scholarship Fund. This year’s event took runners past the pounding surf as well as campus landmarks. A special canine companion event, the doggie dash (see below), attracted some of the most enthusiastic competitors. Assistant Vice Chancellor George Thurlow, the Alumni Association’s executive director, declared the 4th Annual All Gauchos Reunion to be “a tremendous success,” with record attendance at events that included the Alumni Awards Banquet, Alumni Vintners Tasting, Athletics Hall of Fame Banquet, and Golden Gauchos and Riviera Reunions. In addition to alumni, the reunion welcomed current students, friends of UC Santa Barbara, and members of the community.

Breaking ground for the new Ocean Science Education Building

Pinpoints

- The campus’s Office of Technology and Industry Alliances reports that four to seven new companies based on UCSB research are formed every year. In addition, 66 companies on four continents (30 in California) are currently using technologies developed at UC Santa Barbara.

- The University Art Museum on campus boasts the nation’s most extensive and important archive of original materials related to Southern California architecture and design.

- UCSB surveys have found that over half of all graduating seniors have collaborated with faculty members on original research or creative projects. The campus nurtures such activities with a program of student grants totaling more than $200,000 annually.

- The campus’s Middle East Ensemble has been invited by the Egyptian Ministry of Culture to perform a series of concerts in Cairo, Alexandria, and Luxor in July.

- UCSB’s Intercollegiate Athletics Hall of Fame inducted eight new members in April. The 2010 class included seven All Americans, an NCAA Woman of the Year finalist, and two gold medalists at the Beijing Olympics: volleyball player Todd Rogers and swimmer Jason Lezak.

For more information on these and other campus developments and activities, visit www.ucsb.edu.
Federal Stimulus Program Brings 40 Grants to UCSB

UC Santa Barbara has been awarded more than 40 research grants with funds made available through the American Recovery and Reinvestment Act (ARRA) of 2009, also known as the economic stimulus package.

The grants, worth a total of some $37 million, came primarily from the National Science Foundation, the National Institutes of Health, and the Department of Energy and support a broad range of research on the campus.

Calling the grants “further recognition of the very high caliber of research being conducted at UC Santa Barbara,” Chancellor Henry Yang said the federal funds would “help support, sustain, and indeed stimulate our local economy, and also help build UC Santa Barbara’s outstanding research enterprise.”

Michael Witherell, vice chancellor for research, said the federal agencies awarded the ARRA grants on a competitive basis.

“By funding our new Center for Energy Efficient Materials, the Department of Energy has given an enormous boost to our research on how to improve energy efficiency,” he said. “ARRA funds will also support our research on energy efficiency.”

New Nanomedicine Center Established on Campus

The Sanford-Burnham Institute for Medical Research has joined with UC Santa Barbara in establishing a new Center for Nanomedicine on Campus. The collaborative biomedical research partnership merges UCSB’s core expertise in engineering, materials sciences, nanotechnology, and physics with Sanford-Burnham’s strengths in the biological sciences and biomedical research. Leading biomedical researcher Jamey D. Marth has been named director.

The partner institutions plan to develop collaborative research teams that will produce innovative technologies for an entirely new generation of biosensors, medical devices, drug delivery nanoparticles, instruments for advanced biomedical research, and other products.

An offshoot of nanotechnology, nanomedicine refers to highly specific medical intervention at the molecular scale for curing disease or repairing damaged tissues, such as bone, muscle, or nerve.

Marth serves on the faculty of both partner institutions. At UCSB, he is based in the Department of Molecular, Cellular, and Developmental Biology and holds two prestigious endowed professorships: the John Carbon Chair in Biochemistry and Molecular Biology and the Duncan and Suzanne Mellichamp Chair in Systems Biology. He previously was professor of cellular and molecular medicine and Howard Hughes Medical Institute Investigator at the UC San Diego School of Medicine.

Findings

By studying the hydra, a member of an ancient group of sea creatures that is still flourishing, scientists at UC Santa Barbara have made a discovery in understanding the origins of human vision. The finding appeared in the Proceedings of the Royal Society B, a British journal of biology. Hydra are simple animals that, along with jellyfish, belong to the phylum cnidaria. Cnidarians first emerged 600 million years ago. “We determined which genetic ‘gateway,’ or ion channel, in the hydra is involved in light sensitivity,” said senior author Todd H. Oakley, assistant professor of ecology, evolution and marine biology. “This is the same gateway that is used in human vision.” David Plachetzki, who received his Ph.D. for work done in the Oakley lab and is now a postdoctoral fellow at UC Davis, is the paper’s first author, and Caitlin R. Fong, an undergraduate, is the second author.

An international team of scientists, including several affiliated with UC Santa Barbara, has discovered a new planet the size of Jupiter. The finding was published in the journal Nature. The planet, called CoRoT-9b, was discovered by using the CoRoT space telescope satellite, operated by the French space agency. It orbits a star similar to our sun and is located in the constellation Serpens Cauda, at a distance of 1500 light-years from Earth. The European-led discovery involved 60 astronomers, including UCSB postdoctoral fellow Avi Shporer, and the UCSB-affiliated Las Cumbres Observatory Global Telescope Network’s Tim Lister, Rachel Street, and Marton Hidas. Shporer noted that the study of planets outside our solar system is rapidly progressing. “Only 25 years ago no extrasolar planets were known, and today we know of more than 400,” he said.

Art professor George Legrady participated in the 2010 Winter Olympics, but not as an athlete. He showed his work as part of the Vancouver 2010 Cultural Olympiad Festival. Legrady’s “We Are Stardust” was one of more than 40 digital art installations in an 18-day event that featured visual art, music, and performances fueled by digital technology and audience involvement. “We Are Stardust” was a two-screen projection installation that mapped the sequence of 36,034 observations made by NASA’s Earth-orbiting Spitzer Space Telescope from 2003 to 2008. Legrady said the intent of the project was “to consider our relationship to both local and deep space, and how we conceptualize and situate ourselves in relation to such spaces.”

Olympic art: digital installation titled “We Are Stardust”

Andrew Rich: lagoon student

The size of Santa Barbara area lagoons can be predicted, says a study by UC Santa Barbara scientists, who note that their research could help protect the steelhead trout, one of the most endangered species on earth, according to the National Marine Fisheries Service. The lagoons that the trout use as nurseries may be critical for their survival. Steelhead fish are an ocean-going species that returns to lagoons and streams to spawn. Concern for the survival of the steelhead trout prompted Andrew Rich, a doctoral student in earth science, to study lagoons in the Santa Barbara area with his advisor, Edward Keller, a professor of earth science. Rich presented the results of their study at the annual meeting of the Geological Society of America.
The green mussel is known for being a notoriously invasive fouling species, but scientists have discovered that it also has a very powerful form of adhesion in its foot, according to an article in the Journal of Biological Chemistry. The stickiness of the mussel’s foot could possibly be copied to form new man-made adhesives. Other mussels have inspired synthetic polymers that have been made into versatile adhesives and coatings, explained J. Herbert Waite, senior author and a professor at the Marine Science Institute. The green mussel’s adhesive chemistry is much more complicated than that of mussels previously studied. It took Waite and his team six years to unravel the story.

A remote Amazonian tribe in central Bolivia may offer proof that heart attack and stroke — the leading causes of death in the United States and other developed countries — were rare occurrences throughout most of human history. The tribe, known as the Tsimane, may also prove that chronic inflammation, a condition currently associated with cardiovascular disease, may not play as great a role as medical research has suggested. “What we discovered is that inflammation doesn’t always hold as one of the leading causes of heart disease,” said Michael Gurven, a professor of anthropology. “Chronic inflammation in the absence of other factors doesn’t seem to increase heart disease.” Gurven’s findings were published in the science journal PLoS ONE. He is studying the evolution of physiological systems — immune, cardiovascular, renal, digestive — that have contributed to humans’ ever-increasing life span, but have also made them susceptible to many chronic diseases.

For more information on these and other exciting UCSB research developments, visit www.ucsb.edu.

Prospects

The campus’s Center for Stem Cell Biology and Engineering and the Center for the Study of Macular Degeneration will receive $2.5 million of a $20 million, multi-institution grant for vision research. The research will focus on macular degeneration, the major cause of visual impairment in the elderly. The grant, from the California Institute for Regenerative Medicine (CIRM) and the UK Medical Research Council (MRC), will cover preclinical tests utilizing human embryonic stem cells, as part of an effort to get federal approval for clinical trials. CIRM will provide $15.9 million for work in California, and the MRC will add $4.1 million to fund collaborative work in London.

Erkki Ruoslahti, professor at UCSB’s Sanford-Burnham Institute for Medical Research, was awarded a $2.8 million grant from the Department of Defense for research into detection and therapies for breast cancer using nanotechnology. “The prevalence of breast cancer and the large number of deaths from it underscore the need for a paradigm shift in the strategies toward developing a cure for breast cancer,” said Ruoslahti. His team is developing new diagnostic tools that will improve early detection while reducing unnecessary procedures.

It’s like something out of a Robert Ludlum novel: Cybercriminals bent on stealing confidential information hijack the computers of unsuspecting users around the world and infect them with malicious software. Unbeknownst to their owners, these computers form a network of zombie machines — a botnet — that volunteers information the cybercriminals command it to find.

Recently, researchers in the Computer Security Group at UC Santa Barbara won a virtual crime spree of their own and took control of Torpig, one of the largest and most notorious botnets in the world. Pretending to be hijackers, the researchers dived into what they call the “underground economy” and exposed Torpig’s inner workings. In the process, they discovered that 180,000 Windows computers — mainly in the United States and Europe — were under the botnet’s control. These computers were providing data on online bank accounts, credit and debit card accounts, and e-mail accounts. The researchers collaborated with the FBI and other law enforcement agencies, as well as with the banks and financial institutions involved, to notify the owners of the compromised accounts.

The botnet investigation, which is part of an ongoing grant from the National Science Foundation to study the workings of the underground economy, is only one of several projects the group has undertaken over the last several years in its quest to make the cyberworld a safer place. Others include the development of Web sites that examine the veracity of suspicious Web programs, and a study of electronic voting machines.

The group has now been awarded a $6.2 million grant from the U.S. Army Research Office to lead a multi-campus, collaborative effort to develop a comprehensive security system that can defend against cyber attacks.

“It’s called situational awareness,” said Richard Kemmerer, who holds the Computer Science Leadership Endowed Chair. “Every kind of information you can think of — including state secrets — exists on a computer somewhere. Unless that computer is locked up with no connection to the outside world, there’s a chance of that information getting compromised.” Kemmerer is one of the UCSB group’s core faculty members, along with Giovanni Vigna, professor of computer science, and Christopher Kruegel, associate professor of computer science.

For more information, visit the Computer Security Group at http://www.cs.ucsb.edu/~seclab. — Andrea Estrada
Like a great musician, a literary translator brings to life the creative genius of another artist and shares it with the rest of the world. But unlike the musician, who speaks in the universal language of notes and melodies, the translator deals in words and ideas that have the singular complication of originating in a foreign tongue.

“A translator is a literary scholar, a linguist, and a writer,” says Suzanne Jill Levine, professor of Latin American literature and of translation studies in UCSB’s Department of Spanish and Portuguese. “All those sensibilities must be present.”

Levine has translated a number of significant Latin American writers over the course of her career, including Manuel Puig, Guillermo Cabrera Infante, Carlos Fuentes, José Donoso, and Julio Cortázar. Her work has been cited and praised in The New York Times Book Review and by authors and critics around the world. Britain’s Times Literary Supplement noted that her biography of Puig — Manuel Puig and the Spider Woman: His Life and Fictions — set a new standard for biographies of Latin American writers. Also the author of The Subversive Scribe: Translating Latin American Fiction, Levine has received numerous honors and awards for her work, including fellowships from the National Endowment for the Arts, the National Endowment for the Humanities, and the John Simon Guggenheim Memorial Foundation.

Most recently, she served as general editor of a new five-volume series of works by the renowned Argentinian writer Jorge Luis Borges, who died in 1986. Published this spring by Penguin Classics, these English language translations include two volumes of poetry and three of essays.

In addition to her duties as general editor, Levine also edited and wrote the introduction and notes for the volume titled On Writing, which she developed as an anthology of Borges’s ideas and aesthetics. It includes much of his early work — essays, reviews, and articles — and features some of his earliest commentaries, which, until now, have never been published in book form, even in Spanish.

As Levine writes in the introduction, the volume “provides a unique opportunity to experience the thinking of Jorge Luis Borges on what writers do and what writers are — their process, their concerns, their methods and influences, their predilections and aversions, obsessions and quirks — and to discover his own attributes as a writer.”

Readers of the new series will also discover Borges the poet, a lesser-known aspect of his literary genius. “People think of him as the great master of fantastic literature, but little do they know that he mainly thought of himself as a poet,” Levine says. “In a way, everything he writes — whether
Levine describes the act of translating as “interpretation,” with the goal of recreating for her readers as vivid and accurate an experience of the original text as possible. “The only difference between a translation and an original text is that a translation is being measured against a visible original,” she says. “Obviously, the more closely you feel the connotations of the original language, the better the translation will be — but it’s also important that you have a strong connection with your own language.”

When teaching the art of translation to her students — and she does consider translation an art — she presents various theoretical perspectives that illustrate the history of the subject, and how the value of translation as a literary practice has differed from one era to another. “It gives students a sense of the relative significance of translation according to the context in which they find it,” she explains. “But mainly they come to understand that translation is interpretation. It’s based on context. No matter who wrote a particular book, the text lives on in the reader.” Translation relates to a much larger issue, she adds, one that involves not just specific words passing from one language to another, but an entire culture passing from one group of people to another.

“The students end up learning two languages when they study translation — their own and the language of the text,” Levine says. “There is no closer reading than a translation. When they study various translations and see how each reflects a different aspect of the text — how one feels like it’s capturing the drive or sense of the original text more than the others — they become very sensitive readers and interpreters of literature. And that’s the effect they want to reproduce upon the reader.”

Levine likens the art of translation to that of performance, and acknowledges that just as no two performances are the same, neither are two translations. “Curiously, the idea of fidelity is a very slippery and strange idea because once you pass from one language to another, you lose the context of that language,” she says. “You lose the specific relationships that words have to each other and that words have to reality.”

The first writers whose work inspired Levine’s translations were Cabrera Infante and Puig, who is best known for his novel Kiss of the Spider Woman. She was drawn to the presence of popular culture in their works, and what she called their almost hyperrealist capacity to reproduce spoken language. “Their characters’ speech was so alive,” she says. “The ground they were breaking in Latin American literature was similar to what Mark Twain did here — take the spoken idiom and make it literary. But that’s what intrigued me — to hear that voice and to try somehow to perform or to impersonate it in English.”

One of the volumes in the new Penguin Classics series of works by Jorge Luis Borges

TRAINING TOMORROW’S TRANSLATORS

Translation as an academic pursuit has found a home at UC Santa Barbara with the creation of an impressive new doctoral emphasis that allows students from a variety of departments and programs to pursue translation studies as a specialty within their respective fields. Focusing on both translation theory and the practice of translation as a literary art, the doctoral emphasis addresses a variety of scholarly issues, including poststructural linguistics, the philosophy of language, and the task of artfully rendering texts from a foreign language into English.

“In today’s global society, and in the multilingual and multicultural California of the 21st century, literary translation has a major role to play in helping us to understand different cultural and linguistic traditions,” says David Marshall, a professor of English and comparative literature who serves as Dean of Humanities and Fine Arts and Executive Dean of the College of Letters & Science. “We are fortunate to have so many gifted and well-known literary translators at UC Santa Barbara. They have an impact through both their teaching and the works of art that create a global community.”

The translation studies emphasis, formally established in 2009, is available to graduate students in the Departments of Classics, East Asian Language and Cultural Studies, Comparative Literature, French and Italian, Germanic Languages and Literatures, Linguistics, Religious Studies, and Spanish and Portuguese.

Suzanne Jill Levine, one of the campus’s most prolific translators, was instrumental in developing the translation studies emphasis. Other faculty members involved include Michael Berry, associate professor of contemporary Chinese cultural studies, and John Nathan, the Takashima Professor of Japanese Cultural Studies. Among Berry’s literary translations are contemporary Chinese novels by writers Yu Hua, Yi Shaoqian, Chang Ta-chun, Wang Anyi, and Wen-yi Chang. Nathan has translated the work of celebrated Japanese writers Yukio Mishima and Nobel laureate Kenzaburo Oe, including Mishima’s The Sailor Who Fell from Grace with the Sea, and Oe’s A Personal Matter and Teach Us To Outgrow Our Madness.

Among the other faculty members involved in the translation studies emphasis are Yunte Huang, professor of English, who is well known in China for his translations of works by Ezra Pound; Michael Emmerich, assistant professor of premorden Japanese literature and cultural studies; Ronald Egan, professor of Chinese literature and aesthetics; Katherine Saltzman-Li, professor of early modern Japanese literature; and Tu Kuo-ch’ing, who holds the Lai Ho and Wu Cho-liu Endowed Chair in Taiwan Studies and directs the campus’s Center for Taiwan Studies.

— Andrea Estrada
From his field research on seedlings (above), biologist Jonathan Levine has provided the first strong evidence that niche differences are critical to biodiversity.

Early morning at Sedgwick Reserve in the Santa Ynez Valley and, save for the drumming of a Red-breasted Sapsucker, it is as silent as a shining star. A passing storm has left a brilliant blue sky in its wake. As shadows retreat across this 5,900-acre expanse of fields, canyons, and woodlands, the southern slopes of the San Rafael Mountains glow in the soft, golden light of day.

Noted for both its dramatic size and environmental diversity, Sedgwick is one of 36 protected landscapes in the University of California Natural Reserve System, the largest network of university-managed wildland reserves in the world. Covering 135,000 acres from the eastern slope of the Sierra Nevada to submarine canyons off the Pacific coast, these magnificent examples of California’s terrestrial and aquatic ecosystems provide extraordinary opportunities for large-scale research, outdoor education, and public access. Including Sedgwick, UC Santa Barbara oversees seven of the sites (see accompanying article).

"UCSB is proud to take care of seven of the most spectacular reserves in the UC Natural Reserve System, each one of them an invaluable asset," says Vice Chancellor Michael Witherell of the Office of Research, which administers all of the UCSB reserves. "The Sedgwick Reserve offers our researchers a remarkable opportunity for ecological and astronomical research.

BY EILEEN CONRAD
right in the Santa Ynez Valley. At the same time, it serves as a unique outdoor classroom for children from the neighboring communities.”

With a rich Native American history, Sedgwick lies between what were once the largest Chumash villages in the Santa Ynez Valley — Soxtonokmu’ to the northwest and Kalawashaq to the south — with at least one Middle Chumash village (1,500 to 2,000 years old) within its boundaries. The reserve extends over nine square miles, reaching an elevation of 2,600 feet, with stunning panoramic views.

In 1845, the property was incorporated into the vast Mexican land grant, Rancho La Laguna, which extended along the Santa Ynez Valley east of present-day Los Alamos. Over the next 150 years, it was used for ranching, including cattle grazing.

“Sedgwick’s large size enables research of varying scales on native ecosystems and allows for a greater cross-section of interests by scientists,” explains Kate McCurdy, a conservation biologist and director of the reserve. “The botanical diversity is of huge interest to specialists.”

Vegetation types include coast live oak forest, blue oak woodland, valley oak savannah, buckbrush chaparral, coast sage scrub, grassland, willow riparian forest, serpentine outcappings, and agricultural land. Figueroa Creek flows through the property, which is a refuge for wildlife, such as American black bear, coyote, mule deer, golden eagle, grey fox, and mountain

Examples of Sedgwick’s extensive native plant collection, such as coast Indian paintbrush (Castilleja affinis), above, will be housed at the Tipton Meeting House.
Sedgwick’s natural history, scenic vistas, and panoramic views are all subjects of specific hiking tours offered by the reserve.

Like many of the UC reserves, Sedgwick would not exist were it not for a grand act of philanthropy. In 1995, rancher and sculptor Francis “Duke” Sedgwick and his wife, Alice, both now deceased, gave a large portion of the property to the university as part of their legacy. The remaining acreage was acquired through efforts of the Land Trust for Santa Barbara County and numerous other supporters who saw its value as a place to study the natural world.

Today, more than 128 scientists from UC and other universities in the United States and abroad are engaged in 45 research projects at Sedgwick that are advancing our understanding of the natural systems at work in the environment, including 14 projects led by UCSB faculty members.

For example, a pioneering study by UCSB biologist Jonathan Levine is yielding new information about invasive plant species and how annual endemic plants compete for resources. With funding from the National Science Foundation, soil scientists Joshua Schimel and Patricia Holden are examining the links between plant and soil processes, and how changes in the underground microbial community affect ecosystem dynamics in California annual grassland. Long-term botanical research by environmental scientists Carla D’Antonio and Claudia Tyler is focused on the restoration of native grasslands and the role of cattle grazing in influencing oak communities.

A major earthquake fault and two distinctive geological formations — the relatively young Paso Robles alluvium and the much older Franciscan metamorphosed seafloor — are of great interest to geologists who are mapping the tectonic history of the fault to better understand its role in the formation of the Santa Maria Basin. Recently, UCSB astrophysicists have begun to explore a new frontier at Sedgwick — the dark night sky. The Byrne Observatory at Sedgwick, the first at a UC reserve, is part of a planned global network of telescopes dedicated to scientific discovery and education (see accompanying article).

For more than 250 UCSB students, Sedgwick is the setting for fieldwork in botany, biology, creative studies, ecology, geology, and environmental studies. In a landscape painting class taught by paleobotanist Bruce Tiffney and artist Hank Pitcher, undergraduates learn to observe nature from different perspectives.

“The distinction is in how we record an observation,” explains Tiffney, who is dean of the College of Creative Studies (CCS). “In science, you try to squelch individuality and report on what you have observed in the most dispassionate way.
The sign on the door of the new Laurie Nelle Byrne Observatory at the Sedgwick Reserve reads: “LCOGT.net We Always Keep You in the Dark.”

The Byrne Observatory, the first at a UC Natural Reserve, is part of the Las Cumbres Observatory Global Telescope Network (LCOGT). When complete, the network will link 44 telescopes around the world, creating an uninterrupted, 24-hour-a-day view of the night sky. Data gathered by the robotic, solar-powered telescopes are accessible via the Internet.

Wayne Rosing, chief engineer and founder of the LCOGT, says Sedgwick was chosen as the site for the 32-inch telescope because of its clear, dark sky. The observatory will create a “gateway to science” for K-12 classes and extraordinary research opportunities for University of California students and astrophysicists.

“We anticipate that the network will be used primarily by students, and once it is fully commissioned robotically, time will be available for scheduling by members of the UC system,” notes Rosing, a pioneer in computer engineering and senior fellow in both astrophysics and engineering at UC Santa Barbara. He also is a senior fellow at UC Davis.

The LCOGT is particularly interested in astronomical events that appear suddenly and without warning, such as supernovae and gamma-ray bursts and objects that need to be observed for long periods of darkness, including planets outside of the solar system and binary star systems.

The Byrne Observatory is named in memory of Laurie Nelle Byrne, who served as a docent at the reserve, and in honor of the Byrne family. Over the years, gifts from the family’s foundation have greatly enhanced the reserve, including support for the Tipton Meeting House, the future headquarters for Sedgwick and the site for remote telescope presentations.

“With a remote telescope operation you can follow a transient object that appears bright and then disappears,” explains UCSB astrophysicist Lars Bildsten, a permanent member of the Kavli Institute for Theoretical Physics. “As this network is constructed, it will allow users around the world to capture these events.” — Eileen Conrad

Sedgwick’s historic barn, built in 1907, is being restored for a planned ranching heritage museum with a gift from a UCSB alumna.

The outdoor classroom program brings more than 800 elementary school children to the reserve each year to experience nature, some for the first time, says outreach director Sue Eisaguirre. Students become part of a restoration experiment that they monitor over several years. Annually, more than 1,000 visitors enjoy public hikes and lectures or come to Sedgwick to paint or have a picnic on the ranch grounds.

About 70 volunteers serve as docents at the reserve, where they lead field trips possible. Whereas in art, individual insights come into play and are then applied to the interpretation. It is all about seeing what is in front of you.”

Tiffney helps students see how the three species of oak on the property differ, for example, and he talks about the underlying geological forces that shaped the land.

“One of the things about geology and fieldwork in the natural sciences is that the scientists who keep the best notebooks and make the best drawings usually have the most profound insights,” said Pitcher, a CCS lecturer, in an interview with the UC Reserve newsletter. “Drawing is a way of learning how to see.”

UC budget cuts are taking their toll on the number of classes at Sedgwick. “It is unfortunate, but all of the reserves are seeing fewer students,” McCurdy notes. “The field studies portion of a college student’s experience is being pared down, frequently because of the costs involved in getting here. It is a part of a larger concern that these are our future scientists, the future stewards of the land.”
A CATALOG OF NATURE

While they clearly are places of great beauty and serenity, the University of California Natural Reserves also are living laboratories where more than 2,000 scientists from around the world are using new methods to gain insight into how the natural world functions and how localized events relate to global trends. UC Santa Barbara manages seven of these 36 protected areas, many of which offer public tours and educational access. These habitats host endangered species and native plants in unique landscapes.

“The UC Natural Reserve System comprises a wonderful collection of research and teaching sites,” says UCSB ecologist William Murdoch, director of the campus’s reserves. “UC Santa Barbara has more reserves than any other UC campus, and they represent an incomparable range of environments.”

Following are brief descriptions of the reserves managed by UCSB. (Complete information on the entire UC reserve system is available at http://nrs.ucop.edu.)

**Carpinteria Salt Marsh** is one of the largest and most ecologically important coastal estuaries in Southern California. It includes extensive wetland, sub-tidal, channel, and emergent upland habitats. It offers pre-arranged tours for K-12 classes and other groups. Contact: (805) 893-7670.

**Coal Oil Point**, in Goleta, is one of the best examples of the coastal-strand environment in Southern California. It protects a wide variety of coastal and estuarine habitats. It offers tours and volunteer opportunities. Contact: (805) 893-5092.

**Kenneth S. Norris Rancho Marino Reserve**, in Cambria, provides university researchers and classes with access to one of the most spectacular stretches of coastal habitats in central California. The privately owned reserve, named for a founder of the Natural Reserve System, is situated in the most significant bio-geographical transition area for both marine and terrestrial communities.

**Santa Cruz Island Reserve**, owned by the Nature Conservancy, is located on the largest of the Channel Islands located off the Southern California coast. It contains breeding grounds for harbor seals, seabird nesting colonies, many endemic plant and animal species, and well-preserved archaeological sites, which are accessible to university classes and researchers.

**Sedgwick Reserve** in the Santa Ynez Valley hosts large-scale field studies in varied native ecosystems and agroecosystems. It offers educational programs and volunteer opportunities. Open to the public on the second Saturday of each month for hikes and more. Contact: (805) 686-1941, ext. 4.

**Valentine Eastern Sierra Reserve** consists of two sites, Valentine Camp and the Sierra Nevada Aquatic Research Laboratory (SNARL), both located near Mammoth Lakes. Valentine Camp features a remarkable pristine sub-alpine habitat. SNARL serves as a major center for research for the eastern Sierra Nevada and Owens Valley. They offer educational programs and tours. Contact: (760) 935-4334.

and hikes, collect seeds for the native species seed bank, maintain the restoration nursery, and discover new plant species to add to the reserve’s botanical list. They also monitor the bird population, enthusiastically reporting on new arrivals and unusual sightings, among other things.

“It is surprising how many people come out here with very interesting backgrounds, and what they want to give to us,” says McCurdy. “They elevate the reserve with their time, expertise, and support.”

Many of the historic buildings on the property, including the original ranch house and bunkhouse where scientists and students stay, are in need of substantial repair and upgrading to support the world-class research under way. Without an endowment to fund its operation, Sedgwick depends on annual private contributions for both its outreach program and improvements. Plans for stepped-up fundraising activities are being developed.

One of the most significant enhancements to the reserve will be the completion of the Tipton Meeting House this fall, made possible by a bequest from a UCSB alumnus. The sustainably designed visitor and education center will have a lecture hall for workshops and remote telescope presentations, and office and archival space for the reserve. The century-old barn is being restored for a planned ranching heritage museum, and a residence for the director is under construction, also with gifts from alumni.

The aim of these efforts, says McCurdy, is to make Sedgwick an even more accommodating place for researchers and students and “bring this amazing reserve another step closer to realizing its great potential.”

**The Western Snowy Plover, a threatened species, at Coal Oil Point.**

**The National Science Foundation and NASA fund studies of snowpack at the Valentine Reserve.**

**The Carpinteria Salt Marsh is an important regional nursery for marine and estuarine fish.**
When Bob Koegel arrived at UC Santa Barbara in the 1970’s, children with autism weren’t allowed to go to school. In fact, most of the world hadn’t heard of the word. “When I started, people made bumper stickers that said ‘Educate Autistic Children,’” Bob says. “Nobody knew what autistic meant. They thought it was a typo — they thought it meant ‘artistic’ children. Now, everybody knows what autism is.”

It’s an epidemic, and the Koegel Autism Center, which recently moved into its impressive home on the west end of the new Gevirtz Graduate School of Education building, has never been busier. Lynn Koegel is director of the center, which has been recognized by the National Academy of Sciences as one of the best in the country. Her husband, Bob Koegel, is co-director and a professor of counseling, clinical, and school psychology, as well as head of the special education program. He teaches graduate students and directs their research, while she applies their findings to the treatment offered at the clinic and in the field.

Bob Koegel’s autism research at UCSB began with only 20 children in a small house on the west side of campus. Today, he, his wife, and about 100 clinicians work intensively with several hundred autistic children and, on a short-term basis, with as many as 1,000. “And they come from all over the world — Europe, South Africa, Mexico, South America, Asia, everywhere,” Lynn Koegel says. “We do have long wait lists. It’s sad that there are so many kids now.”

Their research has led to legislation forcing states to include autistic children in public schools. It’s also been covered extensively by the major television networks — ABC, CBS, NBC, and PBS all have done documentaries on the Koegels’ research. “This has become a national problem,” Bob says. “All of this research, productivity,
political activity, media attention — all of this led to the growth of the autism center.”

A leadership gift of more than $2.5 million from Brian and Patricia Kelly has played a big role in enabling the center to expand into its new state-of-the-art facility. And a $940,000 grant from the Broad Foundation has funded the new Eli & Edythe L. Broad Asperger Center at the Koegel clinic.

Lynn Koegel is the author of Overcoming Autism, hailed as one of the most practical and helpful books available on autism treatment. In addition, she was featured in a 2005 episode of ABC’s “Supernanny” television series. She worked with the child of parents who had all but given up hope that their son could be helped. “Before your eyes, she gets this child talking, and smiling, and laughing,” says Bob.

The couple’s expertise is used every day by doctors, here and around the world. They have trained every pediatrician in Santa Barbara County to recognize the signs of autism. But it doesn’t stop there. They helped train every pediatrician in Nova Scotia — and Holland is next. “We’re training a team that’s going to train all of the health providers in Holland,” Bob says. “People are hearing about this, so now we’re being contacted not only by other countries, but also organizations that would like to do large-scale training in the United States.”

Jane Close Conoley, dean of the Gevirtz School, explains the importance of the Koegels’ research and clinical work. “Lynn and Bob Koegel lead the nation in developing effective treatments for individuals with autism spectrum disorders,” she says. “Their work is enormously influential in schools, with families, and within the medical community. In addition to their National Institutes of Health–supported research efforts, they offer expert clinical services to many hundreds of families each year. They are committed to developing the next generation of researchers and practitioners. UC Santa Barbara is very fortunate to be home to the Koegel Autism Center.”

While their work provides hope for forlorn parents who had all but given up hope, the Koegels’ long-term goal is to cure autism. “We’re searchers,” Bob says. “We don’t just take what the world gives us. Like the whole campus, our goal is to improve the world.”
Campus has received a $750,000 contribution to establish a new scholarship fund, the Kevin Christensen Memorial Scholarship Fund. The gift, in the form of a bequest from Christensen's late mother, Carolyn, will help keep UCSB accessible and affordable for deserving students, said Mike Miller, acting director of the UCSB Office of Financial Aid.

“Your partnership,” they wrote, “will continue to play a pivotal role in enabling our campus to respond to fiscal challenges in ways that do not compromise our commitment to quality, innovation, access, and excellence.”

The fiscal challenges that California and UC face are significant and well documented. But even as UCSB grapples with reductions in state support, leaders of the campus and the foundation have been working diligently to look beyond the current crisis. As the chancellor and chair put it: “Planning is now under way to identify priorities for the next phase of our campaign that will help protect and build on what we have already achieved.”

Gary Greinke, associate vice chancellor for development, said the planning effort has included several top-level meetings that have been valuable in helping to identify campus needs and opportunities.

Thus far, the multi-year campaign has raised $571 million for priority projects and initiatives.

New Scholarship Fund is a Living Memorial

The campus has received a $750,000 gift to establish an endowment that will provide ongoing support for student scholarships in memory of UCSB alumnus Kevin Christensen.

The gift, in the form of a bequest from Christensen's late mother, Carolyn, will help keep UCSB accessible and affordable for deserving students, said Mike Miller, acting director of the UCSB Office of Financial Aid.

“The Kevin Christensen Memorial Scholarship Fund comes at a time when students are in dire need of scholarship assistance,” Miller said. “With the recent increase in UC fees, many students are struggling to find ways to finance their college education, and it is generous gifts such as this one from the Christensen family that will make the dream of a college degree become a reality for many of our students.”

The recent contribution will help advance “Project You Can,” a UC systemwide effort to raise $1 billion in private funds for financial aid to ensure educational access for all qualified students. At UCSB, 70 percent of all undergraduates receive some form of financial aid.

Jack Johnson Gives Back to Aid Disabled Students

Singer and songwriter Jack Johnson and his wife, Kim, both UC Santa Barbara graduates, have made a $50,000 contribution to the campus to support students with serious medical conditions through the Disabled Students Program. The gift honors the courageous life of Danny Riley, who was a UCSB student when he died of brain cancer in 2007.

The Danny Riley Fund will help undergraduates with cancer and other serious illnesses to pursue their education at UCSB by providing support for financial aid, medication, housing, adaptive equipment, home care, transportation, family visits, and other special needs.

“Our cousin, Danny Riley, lived life to the fullest and didn’t let his battle with cancer deter him from his dream of attending UCSB,” said Jack Johnson. “Kim and I created the Danny Riley Fund to support students who face similar challenges and to pass along Danny’s zest for life.”

Gary White, director of the campus’s Disabled Students Program, expressed his sincere gratitude to the Johnsons for their important contribution. “The Danny Riley Fund is already helping students by making it possible for parents to be here at critical times,” he said. “This very generous gift will greatly enhance the services we provide.”

Benefactions

■ Alumnus Huican Zhu and two anonymous donors have given the campus $500,000 to establish the Glen and Susanne Culler Chair in Computer Science. The endowed professorship will support the teaching and research of a leading scientist in the discipline that Glen Culler helped shape.

“The Glen and Susanne Culler Chair honors the memory of Professor Culler and his seminal role in the development of the Internet, which has transformed the way we communicate and live,” said Chancellor Henry Yang. “We are deeply grateful to Huican Zhu and the other generous donors for their vision and commitment to technological innovation and the future excellence of the campus.”

Culler, who died in 2003, was an emeritus professor of electrical and computer engineering. He was awarded the National Medal of Technology in 2000 for his “pioneering innovations,” including his work to develop the ARPAnet, which eventually became the Internet.

Zhu, a senior software engineer at Google, earned his doctorate in computer science at UCSB in 2000. Without the financial support he received from the department, Zhu said, he would not have been able to attend UCSB. “I was really fortunate to be at UCSB, where I learned all the training for my work at Google,” he said.

■ UC Santa Barbara alumnus Tunc Doluca and his wife, Lale, have made a $500,000 gift to the campus to establish an endowed chair in the Department of Electrical and Computer Engineering. The Doluca Family Chair will support the teaching and research of a distinguished scholar specializing in analog and mixed-signal integrated circuit design, which will help strengthen pioneering research in this important field.

“Analog and mixed-signal integrated circuits provide the vital link between real world signals, such as sound, temperature, and sight, for example, and today’s powerful digital signal processors,” said Tunc Doluca, president and chief executive officer of Maxim Integrated Products. Doluca earned a master’s degree in electrical engineering from UCSB. He holds 11 mixed-signal design patents.

COMING SOON! Work is nearing completion on the new, 15,570-square-foot Pollock Theater, a part of the Carsey-Wolf Center for Film, Television, and New Media. The 298-seat film theater is named for donors Joseph and Helene Pollock and the Pollock Family. It also features the Michael Douglas Lobby, named for the Academy Award-winning actor and UCSB alumnus.
Speed Society

The adrenalin rush that comes from traveling at breakneck speed has been a part of human consciousness since modern technology created the mechanisms that make going fast a possibility. In *The Speed Handbook: Velocity, Pleasure, Modernism* (Duke University Press), English Professor Enda Duffy examines the cultural dynamics of speed, which he suggests have their roots in the birth of the automobile.

“Aldous Huxley in the 1920’s wrote that the modern age has a slew of new inventions, but that none of them gives us an actual experience of speed. Duffy says, “All these things promised to give people new experiences, but they’re basically just enhancing old ones. The only exception is driving fast. That seems to me truly like a physical thrill that my great-granddad could not have had.”

In his book, Duffy shows how the experience of speed is the quintessential experience of modern culture. With the mass-produced automobile, speed became a key route for individuals to experience the thrill of modernity for themselves. Checking out car culture in books ranging from F. Scott Fitzgerald’s *The Great Gatsby* through J.G. Ballard’s *Crash*, Duffy describes “adrenaline aesthetics” — the ways in which speed is shown as a seductive, hyper-physical rush — and how that matters to our culture.

The book notes how the experience of speed was marketed in the dawning era of mass consump-

en, and people were incited, even trained, to hate slowness. Duffy looks at how cinema, invented at the same time as the automobile, actually trained people to see, hear, and sense the joys of speed.

North Korean Gulag

In 1993, Kim Yong was a model North Korean citizen. Dedicated to his country and its leaders, the lieutenant colonel in the National Security Agency enjoyed a privileged life with his wife and two children. When his superiors recommended him for a promotion to the rank of full colonel, however, a background check turned up a discrepancy in his family history that turned his world upside down.

The government accused Kim Yong of treason. Despite a lifetime of unfailing loyalty, he was arrested — by order of North Korean leader Kim Jong-il — tortured, and sentenced to one of the country’s most brutal labor camps.

In *Long Road Home: Testimony of a North Korean Camp Survivor* (Columbia University Press), Kim Suk-Young, an associate professor of theater arts, shares Kim Yong’s first-person account of the atrocities he witnessed — and experienced — in Camps 14 and 18. She also tells of her harrowing escape through China and Mongolia to South Korea and, eventually, the United States. Kim Yong is the first known survivor of Camp 14, and the only known person to successfully escape from Camp 18.

Kim Suk-Young and Kim Yong met when Kim Suk-Young was a faculty member at Dartmouth. She had taken a group of Korean studies students to a conference on North Korean human rights, and Kim Yong was the plenary speaker. “His story was so compelling that we were all moved to tears,” recalls Kim Suk-Young. “We couldn’t believe these things were taking place now, in our time. I decided right then that somebody had to tell his story to a wider audience than just the people attending his talk.”

Walmart Nation

Wal-Mart has come a long way since 1962, when founder Sam Walton opened his first discount store in Rogers, Arkansas. With nearly 8,000 retail outlets in 15 countries, 2.1 million employees worldwide, and sales of $401 billion for fiscal year 2009 alone, Wal-Mart Stores, Inc. has become the largest company in the world and has changed the way the world does business.

In *The Retail Revolution: How Wal-Mart Created a Brave New World of Business* (Metropolitan Books), Nelson Lichtenstein, a professor of history and director of the campus’s Center for the Study of Work, Labor, and Democracy, investigates the rise of the merchandising giant and the business model through which it achieved such immense financial success.

“Deploying computer-age technology, Reagan-era politics, and Protestant evangelism, Sam Walton’s firm became a byword for cheap goods and low-paid workers, famed for the ruthless efficiency of its global network of stores and factories,” says Lichtenstein. “But the revolution has gone further. Sam’s protegés have created a new economic order that puts thousands of manufacturers, indeed whole regions, in thrall to a retail royalty.”

Footnotes

- When chemists in Mexico in the 1940’s began studying barbasco, an indigenous wild yam, they made a startling discovery: The tuber contains chemical components that mimic human steroids and could be used to mass-produce synthetic hormones for new drugs, such as cortisone and the first viable oral contraceptive. Although that discovery positioned Mexico as a major player in the global pharmaceutical industry, the country’s role in advancing this important area of modern medicine has remained largely unknown. In *Jungle Laboratories: Mexican Peasants, National Projects, and the Making of the Pill* (Duke University Press), Gabriela Soto Laveaga, an associate professor of history, reconstructs how rural yam pickers, international pharmaceutical companies, and the Mexican state collaborated and collided over a barbasco industry that continued through the mid-1990’s.

- Christopher McMahon, professor of philosophy, offers a new take on disagreements — particularly political ones — that could lead to greater acceptance of differing points of view, or explain why even the most well-considered arguments rarely result in complete agreement. In *Reasonable Disagreement: A Theory of Political Morality* (Cambridge University Press), McMahon examines the ways in which reasonable people can disagree about the requirements of political morality.

- From the ancient poet Sappho to tomboys in contemporary Indonesia, women throughout history and around the globe have desired, loved, and had sex with other women. A new book by Leila J. Rupp, a professor of feminist studies and associate dean of social sciences, captures the many ways that diverse societies have shaped female same-sex sexuality. In *Sapphistries: A Global History of Love Between Women* (New York University Press), Rupp reveals how, from the time of the very earliest societies, the possibility of love between women has been known, even when it was feared, ignored, or denied. — Andrea Estrada
WE’RE SO EXCITED!

We’re some of the student callers from the UC Santa Barbara Annual Fund, and we just can’t tell you how excited we are about your support for our campus. Every year, thousands of alumni, parents, and friends express their support for UCSB through gifts to the Annual Fund. These unrestricted contributions help create special opportunities for students, develop new programs, and support the continuing evolution of the campus.

Talking to you is always a rewarding experience. And when you tell us that you want to make a gift to the Annual Fund, well, we practically jump for joy! For your thoughtful consideration and your generous support, UC Santa Barbara offers a sincere Thank You.
You haven’t heard there’s an AlloSphere on campus? Wait, you don’t know what an AlloSphere is? Well, you’re not alone. Until recently, no one knew, because the AlloSphere had not been invented. But now it’s here, and more and more researchers are recognizing the power of this unique instrument and education tool to facilitate analysis and encourage creativity. They say there’s nothing like it anywhere.

So what, actually, is it? The AlloSphere Research Facility is a virtual reality environment that allows researchers to see, hear, and experience data in ways not previously considered or available. Visualizing, hearing, and exploring complex multi-dimensional data provides insight that is essential in areas of research — nanotechnology, theoretical physics, cosmology, neurophysiology, and new media are just a few — where the volume and complexity of the data overwhelm traditional computing environments.

The AlloSphere is housed in Elings Hall, home to the California NanoSystems Institute, of which it is a part. After Scientific American visited the facility, it offered this assessment:

“Scientists often become immersed in their data, and sometimes even lost. The AlloSphere makes this easier by turning large data sets into immersive experiences of sight and sound. Inside its three-story metal sphere researchers can interpret and interact with their data in new and intriguing ways, including watching electrons spin from inside an atom or ‘flying’ through an MRI scan of a patient’s brain as blood density levels play as music.”

The AlloSphere was developed by a UCSB team of electrical engineers and computer scientists led by Professor JoAnn Kuchera-Morin, a composer and inventor who teaches in the Media Arts and Technology Program. The product of their collaboration with architects and sound and visual engineers is a 62,000 square foot, three-story cube insulated with sound-absorbing material, equipped with video projectors and some 500 individual speaker elements that together produce 3-D audio and video. On the bridge that crosses the cube’s midssection, researchers can be found interacting with their data, which can be streamed live, using 3-D glasses, special wireless controllers, and embedded sensors.

As Kuchera-Morin told Scientific American, the AlloSphere is “a place where you can use all of your senses” to find new patterns in data.

The AlloSphere is funded in part by the National Science Foundation. More information is available on the Web: http://www.allosphere.ucsb.edu/.

Researchers interacting with projected data in the AlloSphere.

The AlloSphere’s director, Professor JoAnn Kuchera-Morin, on the facility’s suspended bridge.

Electrons inside an atom.