UCSC welcomes its ninth chancellor

A standing-room-only crowd turned out to greet Denise D. Denton during her first visit to campus after being named UCSC’s ninth chancellor. Less than 24 hours after the announcement was made on December 14, Denton was welcomed to UCSC by Chancellor Martin M. Chemers, Robert C. Dynes, Acting Chancellor Martin M. Chemers, and Emeritus Chancellor C. R. Burt.

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February 14, comes to UC Santa Cruz from the University of Washington, where she served as dean of the College of Engineering. She is clearly thrilled by her new affiliation. “This has been a wonderful experience,” said Denton of her selection. “I’m trying to enjoy it and take it all in.”

The University of California leads the United States and the world in public higher education,” she added, noting that UC is thereby also at the forefront of the “challenges and opportunities” facing academia today.

More than 700 people applied for the top post at UCSC, a process that began in May, noted search committee member and UCSC chemistry and biochemistry professor Eugene Swirskes.

“It was a sunny day when the committee was charged, and it’s a sunny day this December 15 when we welcome Chancellor Designate Denton,” said Swirskes. “I look forward to working with you, Denise.”

Computer simulation of Indian Ocean tsunami

Soon after hearing news reports of the tsunami that devastated coastal regions throughout the Indian Ocean, research geophysicist Steven Ward, an expert on tsunami hazards, went to work on his computer.

Using sophisticated computational techniques to simulate the tsunami, Ward created an animated movie showing the tsunami waves spreading out through the Indian Ocean from the site of the powerful earthquake that triggered them. The simulation, based on the physics of earthquakes and tsunamis, was considered preliminary because geologists had not yet fully characterized the earthquake, Ward said.

“The tsunami model depends on earthquake parameters, so as we learn more about the earthquake I will be able to refine it. But the essence of the phenomenon is captured in the animation,” Ward said in January.

A magnitude 9.0 earthquake, the most powerful earthquake recorded in more than 40 years, struck underwater off the Indonesian island of Sumatra on December 26. The resulting tsunami caused devastation throughout East Asia, with the death toll estimated at more than 200,000.

According to Ward, the speed of a tsunami depends on the depth of the water, with waves traveling as fast as 400 miles per hour in the deep ocean.

When the waves come ashore, they are typically moving at about 30 miles per hour, he said, adding that tsunami waves are very different from the waves one usually sees at the beach.

“It’s like the ocean turns into a river and starts to flow onto the land. It’s not a big crashing wave like in the Hollywood movies,” Ward said.

In the aftermath of the disaster in South Asia, he was contacted by numerous media outlets, including the Washington Post, Dateline NBC, the New York Daily News, and Newsweek magazine.

First major study of organic farming in state yields surprises

The first comprehensive study of organic agriculture in California challenges the popular notion that organic farming is dominated by small family-owned farms and shows how the industry’s regulatory structure has thwarted the very benefits that have generated public support for organic agriculture.

“Organic farming is seen as an answer to the crisis in our food system, but organic agriculture in California has evolved in some peculiar ways that effectively limit the number of acres that are in organic cultivation,” said Julie Guthman, an assistant professor of community studies and author of the new book, Agrarian Dreams: The Paradox of Organic Farming in California.

A proponent of many of the ideals associated with organic agriculture, Guthman nevertheless believes the fastest-growing segment of farming today warrants scrutiny. Her analysis included the following findings:

• Many growers switched to higher-value organic commodities to increase earnings.

• Much of the growth of organic agriculture has come from growers who switched from conventional farming and recruited others to join them.

• Many growers went organic out of fear that pesticides they used would be banned or create health risks for themselves or others.

• There were very compelling economic and regulatory reasons for conventional growers to enter into organics,” said Guthman, who believes that the organic industry’s reach was also limited by its decision to self-regulate.

UCSC has received a $500,000 gift to benefit Special Collections in the University Library. The endowment is being established in honor of the late Miller and Bunny Outcast and their lifelong partnership in the field of photographs. Christine Hunting, head of Special Collections, displays an unlisted photograph taken by Miller Outcast. Proceeds from the endowment will be used to fund a permanent staff position dedicated to work on the extensive photography archives housed at UCSC.

Laser technique opens opportunities for nerve regeneration research

In a breakthrough for research on nerve regeneration, a team of UCSC and Stanford scientists has reported using femtosecond laser pulses to precisely cut individual axons of nerves in the roundworm Caenorhabditis elegans, one of the most versatile and widely used experimental organisms for genetic and biomedical research.

The nerves severed by this precision technique regenerate within 24 hours, often with complete recovery of function. The project was a collaboration between biologists at UCSC led by Yuval Rinzel and Andrew Chisholm and applied physicists researchers at Stanford led by Adela Ben-Yakar.

The team’s findings give researchers an experimental system in which they will be able to investigate in detail the genetic and molecular factors that control whether damaged nerves can regrow, said Chisholm, an associate professor of molecular, cell, and developmental biology.

“This technique will enable us to find the genes that are important in allowing an axon to regenerate. In the worm, we can do systematic screening of large numbers of genes, and of drugs and other small molecules as well, to ask how they affect the process of regeneration,” Chisholm said.

The researchers reported their findings in a paper published in the December 16 issue of the journal Nature.

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UCSC’s 40th year

UCSC is celebrating its 40th anniversary in 2004–05 with a number of special events and a fundraising campaign that makes the support of undergraduate and graduate students a top priority.

For information about anniversary events, as well as the Cornerstone Campaign, please go to www.ucsc.edu and select the logo, shown at right. See also pages 22–23.

Revisiting Vietnam in the midst of Iraq

The Vietnam war was never mentioned at all during history major Martin Smith’s high school days in Tennessee. But by doing research at UCSC on that conflict in the midst of media coverage of the Iraq war, he has discovered many similarities between the two wars.

Smith, who served in the Marine Corps from 1997 to 2002, is the winner of last year’s Melkonian Prize for submitting the top proposal to UCSC’s Humanities Undergraduate Research Awards program: “The Soldiers’ Rebellion in Vietnam: Race, Class, and Resistance.”

“There has been resistance [among soldiers] to every war we have ever fought,” he said. “But in Vietnam’s resistance to fighting was on a scale never before seen by the U.S. military.”

Smith found that one reason why resistance in Vietnam was so much greater than in previous wars was the contradiction between what the U.S. government claimed was occurring in Vietnam and what the troops were actually encountering on the ground. He also uncovered the existence of hundreds of underground newspapers that were utilized to help build an anti-war GI movement.
UCSC scientist endorses nitrogen-management efforts

A s a soil scientist at UCSC, Marc Los Huertos helps farmers on the Central Coast manage nitrogen levels to maximize harvests and minimize pollution. He is also part of a growing global effort to address the problem of farm-generated nitrogen pollution. Back from the Third International Nitrogen Conference in Nanjing in October, Los Huertos had a sobering message for farmers: “China is ramping up agricultural production, and strong international environmental regulations could be what saves U.S. farming from a formidable competitor,” said the research manager for UCSC’s Center for Agroecology & Sustainable Food Systems (CASFS).

Convinced that U.S. farmers have a huge stake in regulations that would force global competitors to clean up their act, too, Los Huertos is eager to increase public understanding of agricultural pollution and provide policy advice.

Exploring the political meaning of words

D emocracy, patriotism, freedom—all these words are spoken with overwhelming fervor in the aftermath of 9/11, the invasion of Iraq, and the days that preceded the November presidential election. But what do those words really mean? Apparently, different things, depending on your political affiliation.

In November, (L–R) State Senator Bruce McPherson and Assemblymember John Laird presented a resolution from the California State Legislature to act UCSC Chancellor Martin M. Chemers and UC President Robert C. Dynes, honoring the dedication of the engineering buildings.

The electoral college is the only outdated political system that should be overhauled, according to a UCSC political scientist who urge the UN, among other things, to promote understanding of the nitrogen cycle, assess consequences of its disturbance, and provide policy advice.

U.S. Senate called ‘unrepresentative’

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UCSC scientists have shown that rifampicin, an antibiotic used to treat leprosy and tuberculosis, can dissolve a range of osis, such as tuberculo...
Two UCSC scientists elected AAAS fellows

Two UCSC scientists—Anthony Fink, professor of chemistry and biochemistry, and Russell Hegel, professor of environmental toxicology—were among the 2004 fellows of the American Association for the Advancement of Science (AAAS) announced by the association.

Election as a fellow is an honor bestowed upon members of AAAS by their peers.

The association recognized 308 members as 2004 fellows for their efforts to advance science or its applications that are deemed scientifically or socially distinguished.

An acknowledgement ceremony for the fellows took place during the 2005 AAAS Annual Meeting in Washington, D.C., in mid-February.

Scientists collaborate with museum to create gallery exhibit

The big and bold exhibit, on display this past fall at the Santa Cruz Museum of Art and History, is a prime example of the benefit derived from combining university research with an important cultural institution in the community.

The exhibit featured an array of large and oversized graphic art from prominent American artists such as Roy Lichtenstein, Robert Rauschenberg, and Helen Frankenthaler.

Working closely with the museum, 12 students from UCSC art history professor Catherine Soussloff’s History and Visual Culture class researched large-scale prints by prominent American artists from 1970 to the present.

They held collaborative discussions, interviewed living artists, and visited the press that produced the prints—in addition to conducting extensive archival, library, and web-based investigations.

Based on this research, the students then produced original wall-label descriptions and interpretations for each of the prints displayed at the exhibit, helping educate the public about the exhibition.

“It’s very unusual for students to work directly with such well-known artists at a museum,” noted Soussloff.

In November at SC2004, the premier international conference on high-performance comput-