

News about the Berkeley, Livermore and Los Alamos national laboratories, which are managed by the University of California for the U.S. Department of Energy

RESEARCH AND PUBLIC SERVICE NEWS

LOS ALAMOS HELPS ESTABLISH BIO-PROCEDURES: Los Alamos researchers have helped the nation move toward standardized procedures for investigating and responding to biological threats such as bio-terrorist attacks and accidental release of bio-organisms. The need for greater consistency became clear following the 2001 anthrax mail attacks. As a result, a scientific working group including LANL scientists was established by the FBI. The initial report of the Scientific Working Group on Microbial Genetics and Forensics establishes a set of quality assurance guidelines for microbial forensics labs, and calls for a dedicated national system to analyze evidence from biological crimes and releases. The report was published in the journal *Science*.

BUILDING BETTER BONES: An interdisciplinary Berkeley Lab team is exploring ways to develop bone-like materials that could greatly improve implants such as artificial hips and shoulders. The goal is to harness advances in nanotechnology to fabricate implants that behave as much as possible like real bone: self-repair, adapt to changing physiological conditions and mesh with surrounding tissue. By contrast, conventional artificial joints are made from metal alloys that often trigger inflammation and immune responses and require corrective surgery after only a few years. Collaborating in the research, which is sponsored by the National Institutes of Health, are UC campuses at Berkeley and San Francisco and a company from Washington State.

CHANGES IN POLAR ENVIRONMENT LINKED TO SUN: A Lawrence Livermore researcher has helped show a connection between

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Message from the president

As I wrote in my inaugural message to the UC community recently, I am taking on the presidency of the University of California with great pride in this institution's achievements and great optimism about its future. In this context, I am very pleased to welcome Robert Foley to the University community as Vice President for Laboratory Management (see story below). Bob is exceptionally well qualified and brings great value to the University in its vital job as manager of the three national laboratories.



The coming months will tell us much about the future of our management role. We believe the extraordinary quality of the laboratories shows how successful we have been in the past and can remain in the future. However, the competition for laboratory contracts must meet the criteria and needs of the University as well as those of the Department of Energy, and only time will tell whether that is the case. We are communicating with the Department on these issues; in the meantime, we are proceeding with the intention of competing.

I am a great believer in two-way communication. I will be in touch with the laboratory community as often as I can, and I want you to be in touch with me as well. My office will be setting up new mechanisms to help facilitate the exchange of ideas between us; stay tuned for details. I know how important the University of California connection is to many of you, and I pledge to do all I can to continue a relationship that has been extraordinarily fruitful for the nation, the University, and the staffs at the laboratories.

Robert C. Dynes
President, University of California

MANAGEMENT NEWS

Foley named VP for Lab Management

On the recommendation of UC President Robert C. Dynes, the UC Board of Regents today appointed Retired Admiral S. Robert Foley as Vice President for Laboratory Management.

Foley, a longtime naval commander and consultant on energy and defense issues, will have primary responsibility for the university's management of the three national laboratories it administers on behalf of the U.S. Department of Energy (DOE) and its National Nuclear Security Administration (NNSA). The laboratories are Lawrence Berkeley, Lawrence Livermore and Los Alamos National Laboratories.

"We are honored that Admiral Foley is taking on this leadership position," Dynes said. "The work of the national laboratories is critical to our nation's security, and Bob has the experience, the drive and the leadership abilities to ensure that scientific and technological breakthroughs continue while we continue to make management improvements."

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fluctuations in solar intensity and climate and ecosystem changes near the north pole appear. Thomas Brown was part of an international team that used carbon-14 dating and other techniques to identify biological and climatic cycles lasting 200, 435, 590 and 950 years during the past 12,000 years (the Holocene period), corresponding closely to known fluctuations in the intensity of the sun's output. The team examined core sediment samples from Arolik Lake in southwestern Alaska. The research helps illuminate one aspect of the complex set of factors influencing earth's climate.

CARBON DIOXIDE COULD HARM OCEAN LIFE:

Lawrence Livermore researchers have found that continued release of carbon dioxide from fossil fuel consumption during the next several centuries could increase ocean acidity and damage marine life. Most carbon dioxide emissions into the atmosphere eventually get absorbed by the ocean, increasing acidity. Livermore researchers Ken Caldeira and Michael Wickett used computer models to show that "business as usual" consumption of fossil fuels will increase ocean acidity more dramatically than have eons of gradual, natural fluctuations, damaging acid-sensitive organisms like plankton, coral and deep-dwelling ocean creatures. Their findings were published in *Nature* magazine.

CLEANER BURNING FUELS: Berkeley Lab has developed a combustion technology that produces 10 to 100 times lower emissions of nitrogen oxides from natural gas combustion. The technology, called "ultraclean low swirl combustion," is the outgrowth of more than a decade of research into the interplay of turbulence and combustion heat release. Now entering the marketplace, it has the potential to reduce commercial and residential emissions of nitrogen oxides by hundreds of thousands of tons each year, and to make it easier and cheaper for industry to meet clean air standards, according to Berkeley combustion researcher Robert Cheng.

DNA "GOLD" FROM THE "DESERT": Regions of the human genome thought to have no genetic value may contain heretofore hidden nuggets of DNA gold, according to researchers at Berkeley Lab and DOE's Joint Genome Institute. They discovered DNA sequences that regulate the activation of genes at distances a hundred times greater than previously suspected. Edward Rubin, JGI director, who led the research, compared it to learning that even the most distant tree roots are important to a tree's health. The findings, published in *Science* magazine, suggest important avenues for future research, including studies of human disease.

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 U.S. Department of Energy: www.energy.gov
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 Lawrence Berkeley National Laboratory: www.lbl.gov
 Lawrence Livermore National Laboratory: www.llnl.gov
 Los Alamos National Laboratory: www.lanl.gov

Please direct questions about this newsletter to Chris Harrington, University of California Office of the President, (202) 974-6314, chris.harrington@ucdc.edu

Foley succeeds John P. McTague as vice president for laboratory management. Bruce B. Darling, UC senior vice president for university affairs, served as interim vice president for the past ten months to address management problems at the labs and focus on strengthening business and management systems.

More information about Foley and his career is available at <http://www.ucop.edu/news/archives/2003/oct20art1.htm>

Dynes visits Los Alamos

UC President Robert C. Dynes visited the Los Alamos National Laboratory on October 7 as part of a visit by UC Regents — his first campus or laboratory visit since becoming president on October 1.

Dynes told an audience of laboratory employees that their scientific contributions to the nation are superb and that it is vital for the laboratory to remain focused on its core mission — the safety and reliability of the nation's weapons program.

"The only way to achieve that mission," Dynes said, "is to maintain and build on the strong science and technology base already in place here."

The 60-year-old Canadian-born physicist succeeds retiring President Richard Atkinson at a time when the Regents are faced with deciding whether to compete to continue managing the Los Alamos laboratory for the U.S. Department of Energy.

"My sense of the regents at this point is that the university will step forward to compete for the contract," Dynes said. "We're moving forward today on that assumption."

However, he said the university has communicated several concerns to DOE.

"First, the request for proposal guidelines from DOE must be consistent with the mission of the university, which is excellence in science. We believe DOE should want a science and technology institution, not a factory," he said.

A second concern is the question of funding for the competition.

Third is the question how the university community itself will respond. There are diverse views among faculty and students about UC's role in weapons development, Dynes noted.

The new president emphasized that the university and the Lab have been working to put robust business practices in place. He also said that a strong partner with management expertise and the funds to help defray the cost of bidding might be one way to approach the competition.

"The university's 'intellectual horsepower' is of great value to the nation's security," he said, adding that diversity of culture and experience among all members of the university community will grow even more over time, further strengthening that 'horsepower.'

In conformance with applicable law and UC policy, the university is an affirmative action/equal opportunity employer. Please send inquiries regarding the UC's affirmative action and equal opportunity policies for staff to director Mattie Williams and for faculty to executive director Sheila O'Rourke, both at: UC Office of the President, 1111 Franklin St., Oakland, CA 94607.