LabUPDATE

ISSUE 4 – APRIL 11, 2003

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

STOCKPILE STEWARDSHIP: The Los Alamos and Livermore labs have scored successes in separate projects that are essential to the labs' mission to maintain and certify the safety, security and reliability of the nation's nuclear deterrent.

Los Alamos has completed construction of the second stage of the world's most powerful X-ray machine, the Dual Axis Radiographic Hydrodynamic Test Facility (DARHT). A key experimental tool to study how aging nuclear weapons behave in the absence of underground testing, DARHT began providing high-quality images to the nation's stockpile stewardship program in 2000.

At Livermore, scientists and engineers have successfully tested the National Ignition Facility (NIF) – the world's largest laser – at a new level of power, five kilojoules. NIF is the only National Nuclear Security Administration facility that can achieve fusion ignition with energy gain, which is important for understanding the performance of nuclear weapons as well as for inertial fusion energy production. Other NIF experiments will advance basic understanding in areas such as materials science and astrophysics.

CANCER TRACKING: Hoping to track cancer as it spreads through the body, Berkeley lab researchers have developed a way to shape high-resolution microscopy into three-dimensional renditions of tissue such as mammary ducts.

The result is a microscopic look at the molecular and genetic underpinnings of cancer on a glandular scale. The system could ultimately portray how cancer spreads from a few anomalous cells to millions of cancerous cells radiating throughout a gland. It could also map the cellular degeneration of diseases such as Alsheimer's and Parkinson's.

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Message from the president

This month marks the 60th anniversary of Los Alamos National Laboratory. It is a deservedly proud milestone for the thousands of scientists, engineers, technicians and support staff whose work continues the Los Alamos tradition of scientific discovery and national security.

The dedication and commitment of these employees, under the leadership of Interim Director Pete Nanos, will carry Los Alamos into a new era of excellence, service and accountability. The University of California stands with the Los Alamos community as we work together to reform the laboratory's business and management practices, which have been the focus of much attention in recent months. Our goal is clear – to raise the quality of the laboratory's administrative operations to the same consistently high level of its scientific and technological programs.

The work being done at Los Alamos today is as vital as at any time in the 60 years that the University has had the privilege and responsibility of managing the laboratory. The area of homeland security is a particularly notable example. I am proud of the many contributions being made in the interest of the nation at Los Alamos and at the Berkeley and Livermore national laboratories.

Richard C. Atkinson
President

MANAGEMENT NEWS

External review examines Los Alamos procurement

An External Review Team brought in by the University of California to independently investigate procurement practices at the Los Alamos lab has identified several internal control weaknesses and deficiencies. These findings and the University's actions to address them will increase the laboratory's ability to prevent fraud, waste and abuse.

In the report publicly issued April 10, the team, chaired by former Department of Energy Inspector General John Layton and assisted by forensic accountants from PricewaterhouseCoopers LLP, recommended a number of corrective actions to Los Alamos' procurement practices, in addition to those already implemented by UC and the lab. These combined actions, wrote Layton, "should provide an enhanced control environment for the Procurement Program."

"The weaknesses – insufficient policies and procedures, lack of timely and reliable data and inadequate management – are being rapidly addressed by a complete re-engineering of the lab's business processes," said Interim Lab Director George P. "Pete" Nanos. "Just as immediate steps were taken in August 2002, when irregularities in the purchase card system were first identified, to implement needed controls and accountability, we also have taken steps to address deficiencies in the just-in-time and local vendor agreements processes. They are among more than 92 measurable milestones, with 514 assigned and accountable activities, that are part of the lab's overall Business Improvement Project Plan."

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Research and public service news *(continued from front)*

CONTAINING POULTRY DISEASE: Newly developed rapid diagnostic assays to detect the exotic Newcastle poultry disease developed by a researchers at the Livermore lab and other institutions have "significantly aided" containment of the disease, according to Alex Ardans, director of the California Animal Health and Food Safety Laboratory based at UC Davis.

When the disease broke out in California last October, available assays to identify the disease took six to 12 days, Ardan said. A Livermore team now has come up with a way to identify the deadly virus within four hours of receiving a sample.

"The ongoing collaboration between the Livermore lab and UC Davis doesn't only benefit the state of California but also the nation," Ardan said. "The Livermore approach to developing assays for microbal diseases is being embraced nationwide."

DETECTING HIDDEN NUKES : Nuclear weapons hidden inside shipping containers or trucks could be detected by using tiny subatomic particles that shower the Earth from the sky, research by Los Alamos lab scientists suggests.

The high-energy particles, called muons, scatter in a highly predictable pattern when they strike dense materials like uranium or the lead used in heavy shielding, and that scattering could be picked up by a special detector, the scientists said. They presented their successful results from small-scale testing in an article in the journal Nature.

The main drawback for such detectors is that they are slow, making them impractical for use in high-volume situations. X-ray detectors can scan large trucks in seconds; the muon detector would take minutes, the researchers said. They hope that the concept can be improved upon so that in the future, large detectors could screen shipping containers at coastal ports or trucks traveling through border checkpoints.

DNA DISCOVERY: Berkeley lab scientists have developed a new technique for deciphering biological information encoded in the human genome. The technique enables meaningful comparisons between DNA sequences in the human genome and sequences in the genomes of apes, monkeys and other nonhuman primates

"The ability to compare DNA sequences in the human genome to sequences in nonhuman primates will enable us in some ways to better understand ourselves than the study of evolutionarily far-distant relatives such as the mouse," said Berkeley lab researcher Eddy Rubin. Results of the study led by Rubin recently were published in the journal *Science*.

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The focus of the External Review Team review was the 24-month period ending September 30, 2002, during which there was $2.26 billion in procurement activity. The review team identified $14,530 in potentially inappropriate transactions, which the University has referred to the DOE Office of Inspector General for further review. In addition, five lists of transactions have been submitted to Los Alamos management for additional documentation and review.

Bruce B. Darling, UC senior vice president for university affairs and interim vice president for lab management, stressed that correcting all control problems and other procurement practice deficiencies is a top priority for UC and the lab. "We believe that these actions, taken together, will give American taxpayers the assurance they need that their tax dollars are being well managed at Los Alamos National Laboratory," he said.

A full copy of the review team's report can be found at http://www.universityofcalifornia.edu/news/losalamos/reports/exreviewreport.pdf

Acting deputy named at Los Alamos

Interim Director George P. "Pete" Nanos has appointed Carolyn Mangeng as the Los Alamos lab's acting deputy director.

"Carolyn's years of experience and demonstrated performance at the laboratory give us tremendous balance in the lab's leadership," Nanos said.

In her new post Mangeng is responsible, with the lab director, for providing overall leadership and management of the lab. She will serve as laboratory director in the interim director's absence. She serves as a member of the Senior Executive Team, which evaluates and makes decisions on a full range of institutional policies and issues.

Mangeng will interact on specific issues with other members of the Senior Executive Team and with elected and executive-level officials at the federal, state and local levels. She also will work with UC senior management on a full range of lab issues.

Mangeng most recently served as associate deputy director for national security and as director of the laboratory's Office of National Security Planning and Analysis.

New Los Alamos communications team

Three new communications professionals are in leadership positions at the Los Alamos lab – David McCumber as communications and external relations division leader, James Fallin as public affairs director and Patrick D. Woehrle as government relations director.

McCumber most recently was chief of staff and general counsel to former New Mexico Gov. Gary Johnson. Fallin, a New Mexico native, spent most of his career in the U.S. Navy, including as press secretary and spokesman for both the White House and Pentagon. Woehrle was legislative director for Texas Congressman Gene Green; he managed key policy issues for various legislative committees and served as liaison with federal agencies, including the Department of Energy. Both Fallin and Woehrle report to McCumber.