

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

RECORD LASER OUTPUT: The National Ignition Facility at Lawrence Livermore National Laboratory has produced a record energy level of 10,400 Joules of ultraviolet light for a single beam line. The achievement is the most recent in a steady stream of accomplishments demonstrating that the facility is meeting or exceeding rigorous technical goals. "Full NIF equivalent" performance (extrapolating the single beam output to the 192 beams scheduled for operation by 2008) would exceed the design energy requirement of 1.8 million Joules of ultraviolet energy. "The NIF project has demonstrated excellent management and technical performance under very demanding circumstances," said Linton Brooks, administrator of the National Nuclear Security Administration (NNSA.) "NIF continues surpassing expectations and is now breaking world records. It is well on its way to becoming one of the jewels of NNSA and the nuclear weapons complex." The tremendous energy available in NIF will be used to produce extreme temperature and pressure, similar to conditions in stars and in exploding nuclear weapons.

SCANNING FOR ENERGY: Lawrence Berkeley Lab scientists have developed a portable X-ray computed tomography (CT) scanner capable of examining core samples at remote drilling sites. The device's high-resolution imaging technology – same as used in medicine — could help show how to best extract vast quantities of natural gas hidden under the world's oceans and permafrost. The scanner images the distribution of gas hydrates in core samples pulled from deeply buried sediment. These hydrates are a latticework of water and methane that form an ice-like solid under conditions found in deep oceans and under Arctic permafrost.

(continued on back)

Message from the president

I am delighted to announce to the national laboratory community that the UC Board of Regents has appointed Robert C. Dynes, chancellor of UC San Diego and a physicist with 25 years of interaction with the national laboratories, as the next president of the University of California.

Bob is a first-rate scholar, a highly capable manager, and a deeply compassionate individual. His record of performance as chancellor of UCSD, his commitment to the core values of the University of California, and his vision for the future will make him a superb president.

He also brings a first-hand understanding of the critical role played by the UC-managed national laboratories in advancing American science and security, and he has a deep appreciation for the richness of the relationship between the laboratories and the University of California.

You can read more about this appointment below and online at <http://www.universityofcalifornia.edu/newpresident/>. Please join me in welcoming Bob Dynes as president-designate of this great institution.



Richard C. Atkinson
President, University of California



MANAGEMENT NEWS

San Diego chancellor Dynes named 18th UC president



Robert C. Dynes, a first-generation college graduate who went on to become a distinguished physicist and chancellor of UC San Diego, was named the 18th president of the University of California system on June 11 by the UC Board of Regents.

Dynes was selected from a national pool of more than 300 candidates to succeed Richard C. Atkinson, who retires Oct. 1 as UC president after serving in the position for eight years.

Dynes, 60, is an expert on semiconductors and superconductors who spent a 22-year physics career at AT&T Bell Laboratories before coming to UC San Diego in 1991 as professor of physics. He later served as chair of the Department of Physics and senior vice chancellor for academic affairs before being named chancellor of UCSD in 1996. His wife, Frances Dynes Hellman, also is professor of physics at the campus.

Under Dynes' chancellorship at UCSD, faculty and student quality remained high, academic breadth expanded, ambitious management goals were met, and the campus addressed many key regional and national issues. UCSD today ranks sixth among American universities in federal awards for research, seventh in the number of faculty elected to the National Academy of Sciences, and seventh among public

(continued on back)

The methane trapped in this crystalline mix could theoretically yield far more energy than the planet's remaining reserves of fossil fuel – if only it can be located, characterized and extracted. Berkeley Lab's portable CT scanner, which has braved long ocean voyages and Arctic conditions, is an important tool in the investigational process.

X-RAYS AND ANDROMEDA: Los Alamos scientists led an international team interpreting the results of the most sensitive X-ray survey of our neighboring Andromeda galaxy. X-ray observations from the XMM-Newton satellite enabled the researchers to propose explanations for both a sharply defined source of X-ray pulses and a diffuse glow of X rays, never before seen in Andromeda. The pulses appear to come from a binary star system with a neutron star, the diffuse glow from interstellar gases left over from exploding stars (supernovae). In these gases, new stars are born. Astrophysicist Sergey Trudolyubov reported the findings to the American Astronomical Society. The Andromeda galaxy is of particular interest because of its similarity to our Milky Way galaxy and its orientation at an angle that makes it relatively easy to observe.

X-RAYS, COMETS AND SPACE WEATHER: Lawrence Livermore physicists have recreated in the laboratory X-rays like those produced in space when solar winds collide with gases surrounding comets. Their research, done collaboratively with three other institutions, enables them to study and model processes that reflect solar activity and "space weather" – the flow of particles from the sun that generate aurora and can disrupt communication here on Earth. To carry out their studies, physicists Peter Beiersdorfer and colleagues used spare diagnostic equipment from NASA's ASTRO-E satellite mission in Livermore's Electron Beam Ion Trap (EBIT). They reported their findings in Science magazine.

RESEARCH ALLIANCE: Los Alamos has joined several other New Mexico research institutions in forming an alliance aimed at creating high tech jobs for the state. In addition to Los Alamos, the New Mexico Technology Research Corridor Collaborative combines Sandia, White Sands, three New Mexico universities and other organizations in an effort highlighted in public comments by Gov. Bill Richardson and the New Mexico congressional delegation. The governmental leaders noted that the New Mexico-based institutions, from Los Alamos to Las Cruces, have research budgets totaling nearly \$5 billion. Areas of possible collaboration include high speed computing, optics, modeling and simulation, imaging and remote sensing.

This newsletter is provided by the University of California Office of the President. For more news and information visit these sites:

University of California: www.universityofcalifornia.edu
U.S. Department of Energy: www.energy.gov
National Nuclear Security Administration: www.nnsa.doe.gov
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 Jeff Garberson, University of California Office of the President, (510) 987-0105, jeff.garberson@ucop.edu

universities in the U.S. News and World Report rankings.

"I have a deep appreciation for the value of the relationship between the laboratories and the University of California," Dynes said. "I believe that relationship has greatly benefited the labs, the University, and the nation as a whole.

"The prospect of competing for one or more of the Department of Energy lab contracts will be an important issue for UC to consider in the coming months. Any final decision about whether to compete needs to await the issuance of the request for proposals, which will tell us whether the terms are acceptable and whether it will be a fair competition. That said, I believe the University should move forward as if it were planning to compete.

"In all of this, I have the deepest respect for the accomplishments of the employees at all three UC-managed national laboratories, and I will support their work in every way I can."

Dynes' numerous scientific honors include the 1990 Fritz London Award in Low Temperature Physics and his 1989 election to the National Academy of Sciences. Canadian-born, he is a fellow of the American Physical Society, the Canadian Institute of Advanced Research, and the American Academy of Arts and Sciences.

Review finds controls in place at Livermore

An independent review of business processes at Lawrence Livermore National Laboratory validated the Laboratory's internal controls. The two-month review by Ernst & Young LLP considered such efforts as procurement business process and application controls; interfaces between procurement and property management; property management and property accounting; accounts payable-disbursements and Oracle interfaces and cash receipts controls. The review "did not disclose any material weaknesses in Livermore's system of internal controls" but made "recommendations for enhancing existing control systems," said Anne Broome, UC vice president for financial management.

The review was requested by Livermore director Michael Anastasio. "I felt it was important to get a third party, independent review," he explained. "I am pleased that their report confirms the existence of key internal controls and appropriate business processes. I want to take this opportunity to thank all Livermore employees who worked closely with Ernst & Young on this project."

The review at Livermore is the second such analysis undertaken by UC. The first, an assessment of Los Alamos business practices, was completed in April 2003.

A copy of the complete E&Y report can be found at

<http://www.ucop.edu/news/archives/2003/jun05E%26Y.pdf>.