



Discover LLNL

TRACY EDITION

HIGHLIGHTING SITE 300

The Community Newsletter of Lawrence Livermore National Laboratory • Tracy Edition • Summer 2007

LLNL to partner on new national bioenergy research center

Secretary of Energy Samuel Bodman announced in June that a partnership of three national laboratories - including Lawrence Livermore National Laboratory - and three research universities in the San Francisco Bay Area has been chosen to host one of three new national bioenergy research centers.

This new center will be known as the Department of Energy Joint BioEnergy Institute (JBEI) and is expected to receive \$125 million in DOE funding over a five-year period.

The JBEI's six partners are the Lawrence Berkeley National Laboratory, the Sandia National Laboratories, LLNL, the UC campuses of Berkeley and Davis, and Stanford University. Plans call for the JBEI to be headquartered in the East Bay, central to all partners. Initial



work will take place at the Berkeley West Bio-center in Berkeley.

The other two DOE BioEnergy Research Centers will be located at Oak Ridge National Laboratory in Tennessee and at the University of Wisconsin in Madison. Michigan State University will be a close collaborator on the Wisconsin center.

"These centers will provide the transformational science needed for bioenergy breakthroughs to advance President Bush's goal of making cellulosic ethanol cost-competitive with

gasoline by 2012, and assist in reducing America's gasoline consumption by 20 percent in 10 years," Bodman said.

Research at the JBEI will focus on biofuels - liquid fuels derived from the energy stored in plant biomass.

Harnessing even a tiny fraction of this energy could meet much of the nation's transportation energy needs.

LLNL will undertake studies of the genetics and metabolism of microbes that produce long-chain hydrocarbons to explore the possibility of developing practical sources of non-ethanol liquid fuels. ■

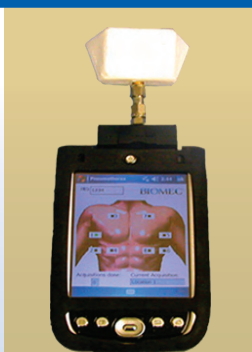
For additional information about the DOE JBEI, go to the Web at <http://www.jbei.org>.

Researchers win five R&D 100 Awards

Livermore Laboratory researchers garnered five R&D 100 Awards (sometimes called the "Oscars of Invention") this year for developing cutting-edge technologies with commercial potential.

The five teams of LLNL scientists and engineers won the awards from the trade journal R&D Magazine for developing advances among the top 100 industrial inventions worldwide for 2006. The researchers worked with five universities, four industrial collaborators and another national laboratory.

With this year's awards, the Laboratory has captured a total of 118 R&D 100 Awards since 1978.



The pneumothorax detector was one of the Laboratory's R&D 100 award winners.



Protecting vision

Livermore researchers have helped develop a new instrument that could revolutionize retinal imaging, providing eye doctors with the capability to more successfully detect, diagnose and treat blinding retinal diseases.

A pneumothorax detector

LLNL engineers have developed a new medical diagnostic device to detect pneumothorax, a medical condition caused by having air trapped in the space between the wall of the chest cavity and the lung.

An optics breakthrough

LLNL laser scientists have developed continuous-phase plate optics that are an important breakthrough for the Laboratory's National Ignition Facility and allow the laser's

192 beams to be optimally coupled to its targets.

Detecting nuclear materials

For the third year in a row, Livermore scientists and engineers have won an R&D 100 Award for developing an advanced radiation detection system - this time, for the Large Area Imager.

About the size of two large desks and often carried in a trailer, the Large Area Imager provides several important advances for detecting and interdicting illegal nuclear materials.

hyper-Active software speeds supercomputing

Laboratory computer scientists have developed a software library called hyper that allows researchers to more effectively use supercomputers to conduct larger, more detailed simulations faster than ever before.

Site 300 welcomes new manager

John E. Scott was selected in May as the new manager of Lawrence Livermore National Laboratory's Site 300, replacing Jim Lane who retired after 40 years of service to LLNL.

Scott joined LLNL in 1992 after a career in the U. S. Navy. He holds a bachelor's degree in aerospace engineering from the U.S. Naval Academy, Annapolis, Md. and retired with the rank of commander in 1991.

"I've worked here for some time and I feel very attached to this place... I am very proud and happy to be involved."

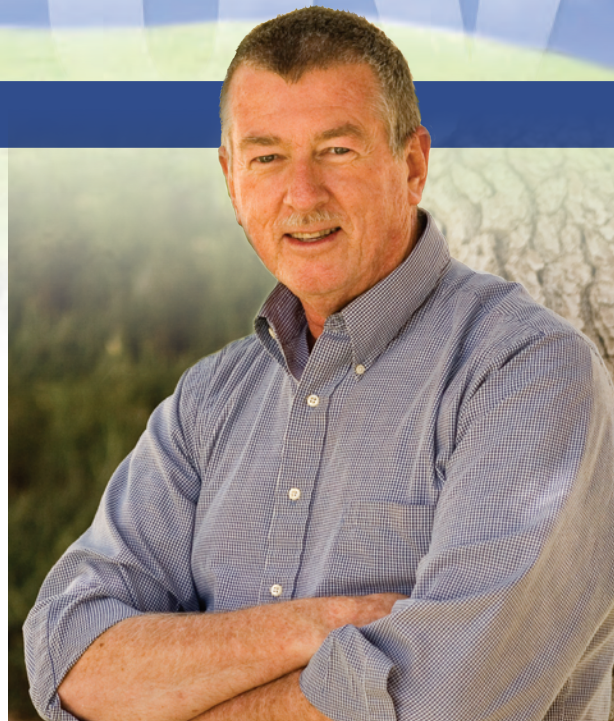
When asked how he feels about taking on the leadership role, Scott answered candidly, "I think it's fabulous. It's a dream come true. I've worked here for some time and I feel very attached to this place. There is a family atmosphere here. I am very proud

and happy to be involved."

Scott added that he is well versed in the management style of the Site. "I've made many contributions to Site 300 over the years, so when I accepted the position of manager, I was already confident that I would be managing a pretty smooth operation."

Previously, Scott served as the facilities manager for LLNL's Chemistry, Materials and Life Sciences Directorate at Site 300. When asked how he feels about taking on the leadership role, Scott answered candidly, "I think it's fabulous. It's a dream come true. I've worked here for some time and I feel very attached to this place. There is a family atmosphere here. I am very proud

and happy to be involved." Scott's background is in safety, which he believes is a hallmark of Site 300 operations. "Safety at Site 300 maps directly to safety for the City of Tracy. Our safety culture means what we accomplish here is done safely for the environment and for the community." During his term as manager, Scott states he will strengthen Site 300 communication with the community. "Conducting tours is a good way for the local community to learn more about what we do here. I urge area residents to take advantage of these." In addition, he believes: "it is vital to explain in an understandable way the nature of the work that is done at Site 300."



John E. Scott

Scott and his wife Pamela live in Livermore. They have three daughters, five grandchildren and two dachshunds. He has a brown belt in karate and enjoys baseball. But don't look for Oakland A's or San Francisco Giants memorabilia in his office — a native of Southern California, he continues to root for his favorite team, the Los Angeles Dodgers. ■

Have you taken a tour?



Community tours of Site 300 began in March. To date, more than 50 area residents have participated and provided many positive comments about their experience.

Site 300 tour highlights include:

- » Environmental remediation facilities and wetlands
- » External views of the Contained Firing Facility
- » Observation points for wildlife and surrounding properties

Tours are held the first and third Fridays of each month and are free and open to visitors 18 years of age and older.

Advance registration is required. To sign up visit the Public Affairs Website at https://www.llnl.gov/pao/site_300_tour_request.html or call (925) 422-4599.

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UC proposal does not advance to next phase of selection process

The U.S. Department of Homeland Security (DHS) in July announced the selection of five sites that will advance to the next phase of the site selection process for the proposed National Bio and Agro-Defense Facility, or NBAF.

The University of California (UC) and its partners, including LLNL, one of the 14 remaining bidders for the facility, were not chosen for this short list of candidate sites. NBAF is the proposed National Bio and Agro-Defense Facility that DHS plans to build to replace the Plum Island Animal Disease Center, an aging facility located just off the coast of New York. UC proposed the NBAF be sited at one of three locations at Site 300, Livermore Lab's experimental test facility southwest of Tracy.

The five finalist sites are located in the states of Mississippi, Kansas, Texas, North Carolina and Georgia. Each of these sites will undergo extensive environmental reviews. A final site is expected to be chosen by DHS in the latter part of 2008.

"The University of California is disappointed that its proposal for the National Bio and Agro-Defense Facility was not selected by the U.S. Department of Homeland Security for further review and consideration," said UC spokesperson Chris Harrington.

"The UC system is a leader in the field of biotechnology and brings a wealth of knowledge and expertise to the area of biosecurity research. We will continue to apply our premier scientific and technological expertise to the homeland security work of our nation, including in the areas of biology and agriculture." ■

NBAF

UNIVERSITY OF CALIFORNIA

Update on LLNL's air permit for Site 300 explosives tests

Lawrence Livermore National Laboratory's air permit application for outdoor explosives detonation tests at the Lab's Site 300 experimental test facility remains under review by the San Joaquin Valley Air Pollution Control District. The permit application, which was re-submitted to the District in April following a request by the District for additional information, seeks permission to expand the quantity of explosives used in tests at Site 300. In particular, if approved, it would allow for three specific tests of roughly 350 pounds of high explosives over an approximately one-year period.

The District will use two processes to evaluate the permit application. The first, called District permitting, is an overall assessment of any operation that will emit air contaminants. The second is a California Environmental Quality Act (CEQA) review of all potential environmental impacts associated with the permit application.

Once the District's evaluation process is complete, it will make preliminary decisions (one under permitting and one under CEQA) to either approve or deny the permit application. The District will then publish a notice of its preliminary decisions in local newspapers and hold a public workshop to discuss the decisions and accept public comment. If the permit application is determined to meet District requirements, it will be approved.

The District held a Public Workshop on July 18 in Tracy to provide an opportunity for the general public to learn more about the District's permit evaluation and approval process. For further information on this process, contact the Air District at (209) 557-6400. ■

High school seniors receive Edward Teller Scholarships



At a recognition reception were from left, Tracy Schools Superintendent James Franco, Tracy Mayor Brent Ives, Janelle Silvis, Congressman Jerry McNerney, Cai Roberts, and the Lab's Ron Cochran.

Two Tracy students have won the Lawrence Livermore National Laboratory's prestigious Edward Teller Science Scholarship. Award recipients are seniors Janelle Silvis of Tracy High School and Cai Roberts of West High School.

Silvis will attend UC Santa Cruz and Roberts plans to attend UC Davis in the fall. A special reception was held in May at Tracy City Hall to honor the recipients.

This marks the first time the award has been presented to Tracy students.

Initiated in Livermore three years ago, the scholarships honor the late Dr. Teller, renowned physicist and Lab co-founder. The awards are given by the Laboratory to graduating seniors selected by the district who excel in science studies. Each student will receive a \$1,000 scholarship and is eligible for an internship at LLNL when they complete their first year of college. ■

Calling all fifth-grade classes: Let's take a Super Science Field Trip



This is what students and teachers have said about the trips:

"The children's interest in science was truly sparked."

"We really loved the experiments. You taught us a lot of science facts."

"Thanks for teaching my class about the wonders of science and how they can be involved in it."

Field trips to LLNL's Discovery Center for individual fifth-grade classes are available Monday through Friday mornings during the school year.

Students will enjoy science displays, group activities and hands-on experiments. Activities are aligned with the California State Science Standards. Prior to the field trip, teachers receive a packet of information to motivate students. Follow-up lessons and resources are provided during the visit for classroom use. Field trips also are available for scout troops and science clubs.

Reservations are required. For more information, go to the Web at http://www.llnl.gov/pao/com/school_tours.html or call (925) 423-3272.

Discover LLNL is a publication of the Public Affairs Office at Lawrence Livermore National Laboratory. If you would like to be included in the distribution of Discover LLNL, please contact Linda Lucchetti, lucchetti1@llnl.gov, or call (925) 422-5815.

Lawrence Livermore National Laboratory is a Department of Energy, National Nuclear Security Administration laboratory managed by the University of California.