



# Discover LLNL

The Community Newsletter of Lawrence Livermore National Laboratory ♦♦♦ Fall 2004

## New bioscience research at Lab



LLNL analytical chemist Keith Coffee explains to the media how the BioAerosol Mass Spectrometer (BAMS) works in the field to detect airborne pathogens. BAMS was one of the technologies presented during a recent open house for two of the Laboratory's newest facilities – the BioSecurity and Nanosciences Laboratory and the Center for Biotechnology, Biophysical Sciences and Bioengineering.

The Laboratory recently announced the formation of two new laboratories that will focus on bioscience and environmental biology and bioscience applications for the medical community.

The BioSecurity and NanoSciences Laboratory (BSNL) serves as an incubator for exploratory science, applying the fields of chemistry, materials science and biology toward LLNL's mission in nonproliferation, counterterrorism and life sciences. Its primary focus is to provide biochemical, biophysical and biomaterials science that can serve as counterterrorism tools or new diagnostic instruments for detecting disease.

The Center for Biotechnology, Biophysical Sciences and Bioengineering (CBBB) brings academic and private

researchers together with scientists to work on emerging medical, bioscience and environmental technologies. It will manage a biomedical technology program within the UC Davis/LLNL Integrated Cancer Center, and host seminars, workshops and related symposia, among other endeavors.

Both centers will utilize multidisciplinary teams in their research and medical and environmental applications. Currently, the CBBB is working on a technique for single-cell cancer detection. The BSNL has developed a BioAerosol Mass Spectrometer (BAMS) technology that can identify airborne pathogens at the single-cell level in about 100 milliseconds.

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## New leadership at Laboratory

Director Michael Anastasio recently announced two new additions to the Laboratory

senior management team. Cherry Murray is the next Deputy Director for Science and Technology. Currently a senior vice president at Bell Labs, Lucent Technologies,



Cherry Murray

she is a nationally recognized physicist who in 2002 was named as one of the "50 Most Important Women in Science" by *Discover Magazine*. Murray will officially join the Laboratory on December 1. She replaces Hal Graboske, who retired in July after 38 years at LLNL.

Jane C.S. Long is the new Associate Director for the Energy and Environment Directorate.



Jane Long

Long is a materials scientist and mineral engineer with more than 34 years of national laboratory and academic experience.

She was most recently with the University of Nevada, Reno both as a dean of the Mackay School of Mines and as a professor in the University's hydrological sciences and geological sciences departments. Long

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# Biodefense Knowledge Center dedicated

Undersecretary for the U.S. Department of Homeland Security (DHS) Science and Technology Directorate Charles McQueary recently took part in the dedication ceremony for LLNL's Biodefense Knowledge Center.

The Center, as part of the Laboratory's Homeland Security Organization, will serve as an around-the-clock national resource to assist DHS and the nation in the fight against bioterrorism. Among its many functions, the Center will provide assessments and respond to information requests from the DHS Operations Center about potential bioterrorism threats.

The Center will be supported by roughly 75 researchers from four national laboratories, including Oak Ridge, Pacific Northwest, Sandia and Lawrence Livermore. It will also collaborate with the National Center for Food Protection and Defense at the University of Minnesota, the Center for Risk and Economic Analysis of Terrorism Events at the University of Southern California, and the National Center for Foreign Animal and Zoonotic Disease Defense at Texas A&M University.

Center Director Bill Colston noted



Charles McQueary (at podium), Undersecretary for the U.S. Department of Homeland Security Science and Technology Directorate, is presented with a gift representing an enlarged calling card to access the Biodefense Knowledge Center by Wayne Shotts, then acting Director of the Laboratory's Homeland Security Organization, and Biodefense Knowledge Center Director Bill Colston.

during the dedication ceremony that its "mission is not just to respond to ter-

rorist attacks but to anticipate, understand and prevent them." ♦

# Laboratory's Vehicle Inspection Station officially opens

Congresswoman Ellen Tauscher visited the Laboratory in September to take part in the official opening of the joint Delivery Vehicle Inspection Station located in the East Avenue corridor between LLNL and Sandia/CA.

The station began operations earlier this year and is considered the final piece of the traffic corridor property-protection area between the two labs.

During the opening ceremony,



Congresswoman Ellen Tauscher (right), officially opened the Delivery Vehicle Inspection Station (above).

LLNL Director Michael Anastasio noted the teamwork and dedication

by the community, the labs and partners across the Department of Energy/National Nuclear Security Administration complex to help make this project a reality.

Congresswoman Tauscher described the station as "another example of the best in national security."

Vehicles entering the station receive a thorough visual and physical inspection by Laboratory security personnel, who also utilize trained explosive sniffing dogs. ♦



# Claire Max wins the E. O. Lawrence award

Longtime LLNL astrophysicist Claire Max has been awarded the prestigious E.O. Lawrence award in physics for 2004. Max was recognized for her contributions to the theory of laser guide star adaptive optics. Through adaptive optics the resolution of fine details of astronomical objects is greatly increased.

The award, established in 1959 in memory of Laboratory co-founder and namesake Ernest O. Lawrence, is presented annually in seven categories for outstanding contributions in the broadly defined field of atomic energy. Max is the 25th recipient from LLNL. She will receive a gold medal, a citation and \$50,000 at an awards ceremony

in Washington, D.C. in November.

Max joined the Laboratory as a physicist in 1974. She was later founding director of the Laboratory's Institute for Geophysics and Planetary Physics. She currently divides her time between LLNL and UC Santa Cruz where she is a professor and deputy director for the Center for Adaptive Optics.

Throughout her career Max has contributed to the fields of



Claire Max

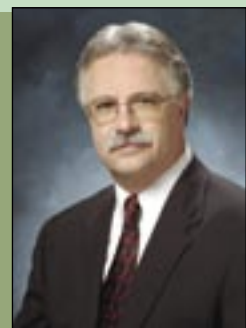
plasma physics, as well as astrophysics. Considered a central figure in the field of adaptive optics, her work in laser guide stars has resulted in an ongoing revolution in ground-based astronomy.

Laboratory Director Michael Anastasio said recently, "Claire Max is an exemplary, internationally recognized scientist

and I extend my sincere congratulations to her." ♦

## New leader for Safety and Environment

Bill Bookless was selected to lead the Safety and Environmental Protection Directorate in August. Formerly a Deputy Associate Director with the Defense and Nuclear Technologies Directorate, Bookless



Bill Bookless

oversees all safety and health programs for Laboratory employees, and environmental management program activities involving waste management and environmental restoration. He replaced Dennis Fisher, who retired in June.

## New leaders

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also enjoyed a long tenure at Lawrence Berkeley National Laboratory where she held leadership posts in the environment and energy areas. She began her new assignment on Nov. 8, and replaces C.K. Chou who retired in June.

Additionally, with the retirement of Deputy Director for Operations Glenn Mara, Director Anastasio has asked

Wayne Shotts, formerly Associate Director for the Non-Proliferation, Arms Control and International Security (NAI) directorate and acting head of the Laboratory's Homeland Security Organization, to serve as Deputy Director for Operations in an acting capacity. Steve Cochran, Deputy Associate Director for Programs under Shotts, will lead NAI and the Homeland Security Organization in an acting capacity. ♦

## Laboratory's Blue Gene/L supercomputer is tops

IBM's BlueGene/L supercomputer, coming soon to LLNL, has already set a new world record for number crunching speed.

In tests conducted at IBM's Rochester, Minnesota production facility, the BlueGene/L system attained a performance of 70.72 teraflops (trillion floating point operations per second), eclipsing NEC's Earth Simulator in Japan and NASA's recently announced Columbia supercomputer at NASA Ames Research Center at Moffett Field, California. The entire system, when fully installed next year, is expected to achieve 360 teraflops.

"The delivery of BlueGene/L to Lawrence Livermore National Laboratory this month shows how a partnership between government and industry can effectively advance national agendas in science, technology, national security and industrial competitiveness," said U.S. Department of Energy Secretary Spencer Abraham.

"Building on a long history of working together on supercomputing projects, the Laboratory and IBM are again forging new frontiers in high performance computing," said Dona Crawford, Associate Director for Computation. ♦



## New at the Lab's Discovery Center

**S**top by the Discovery Center and view a new display on LLNL's Environmental Protection Department. The Department is the Laboratory's lead organization for environmental support. The display highlights some of the Department's state-of-the-art environment practices in the areas of environmental restoration, environmental monitoring, natural resources management and waste management.

This and more is waiting for you at the



Air samples are taken at a monitoring station at Lawrence Livermore National Laboratory.

Discovery Center. Located off Greenville Road at East Gate Drive, the Discovery Center is open Monday through Friday, 1 to 4 p.m. and Saturdays from 10 a.m. to 2 p.m. ♦

## New Labs

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“Livermore has a long and distinguished tradition of applying scientific expertise to human health and medical technologies,” said Bill Goldstein, Associate Director of LLNL's Physics and Advanced Technologies Directorate. “The Lab's experience in health care has also helped in the fight against bioterrorism.”

Of both facilities, Tomas Diaz de la Rubia, Associate Director for the Chemistry & Materials Science Directorate, said “It's the cutting-edge fundamental research that underpins all the work that the Laboratory performs. We want to bring the science to bear that will meet our national needs.” ♦

*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 Scott Wilson, [wilson101@llnl.gov](mailto:wilson101@llnl.gov), or call (925) 423-3125.

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