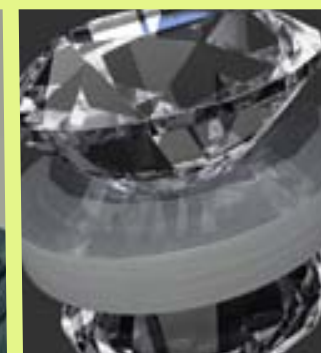
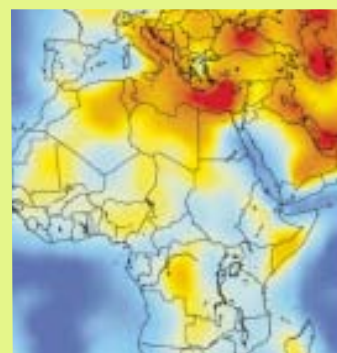
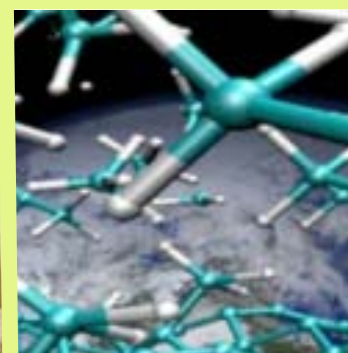
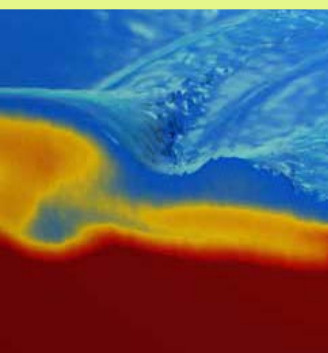
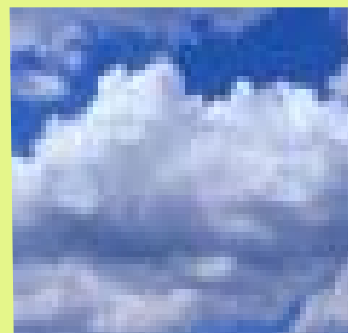
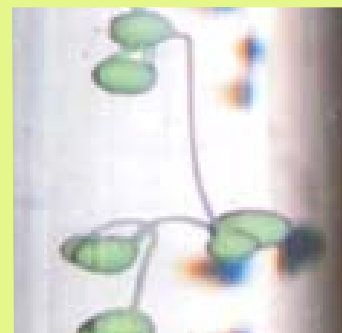
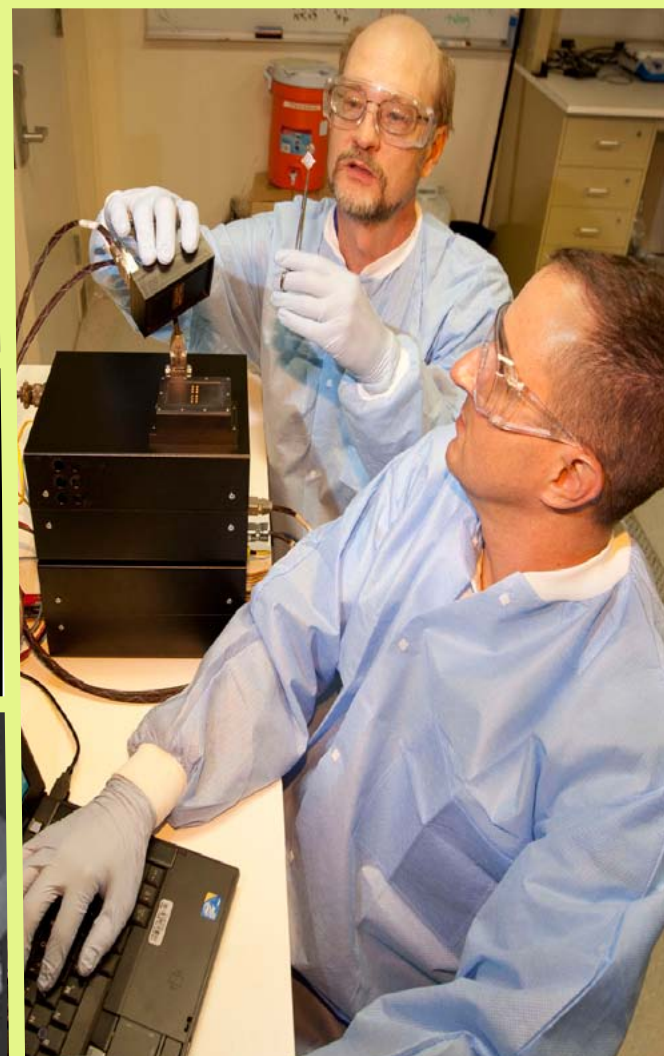
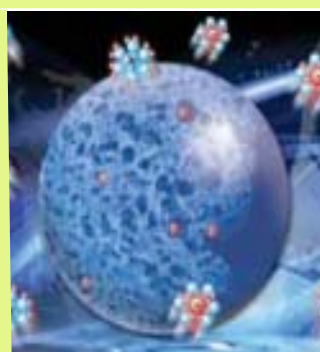
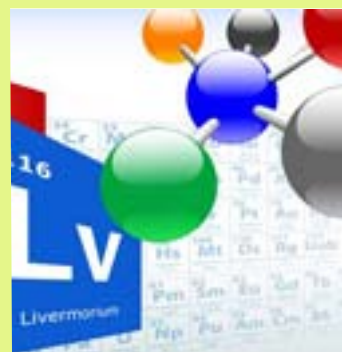


NEWSLINE

2011 YEAR IN REVIEW

LAWRENCE LIVERMORE NATIONAL LABORATORY



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1

Lawrence Livermore National Laboratory

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Parney Albright is the 11th director of the Lab since it was established in 1952. He succeeds George Miller, who is stepping down after six years as director and a 40-year career of service to the nation and the Laboratory.

This issue of *Newsline* was produced by the Public Affairs Office. It represents a sample of the science and technology, operations and people highlights of the year. It is available on the [LLNL Website](#).

2011: Continuity of leadership in building for the future

In a seamless December transition, Parney Albright succeeded George Miller as director of the Laboratory. Emphasizing the need for the Laboratory to think of itself as a unified multi-disciplinary institution, Albright said he would continue to build on Miller's initiatives to maintain Livermore's reputation as the premier national security lab in the nation.

With the inauguration of the first facility in the Livermore Valley Open Campus in 2011, the Laboratory ushered in a new era of collaboration with industry and academia. The High Performance Computing Innovation Center (HPCIC) opened its doors in June as a resource for the industrial innovation that is the key to the nation's economic competitiveness in the global marketplace. The open campus is a joint effort by LLNL and Sandia National Laboratory (California).

The HPCIC was part of a larger effort to bring the Laboratory's supercomputing expertise to bear on a broad set of national challenges, notably in the energy sector. Throughout 2011, LLNL played a leadership role in promoting high performance computing as an engine of technological innovation and the need to develop next-generation supercomputers to maintain the nation's global economic competitiveness into the future.

LLNL also continued to deliver on its national security mission obligations in stockpile stewardship, nonproliferation and arms control, and homeland defense. Supporting facilities and capabilities, such as the National Ignition Facility, achieved major milestones. New experimental capabilities also were added, including a two-stage gas gun at the High Explosive Applications Facility.

On the global stage, Lab capabilities were once again tapped in the wake of a natural disaster. The National Atmospheric Release Center contributed to the United States' response to the

tsunami that devastated northern Japan last March.

After a review of the Lab's core research areas in late 2010 by Albright, then principal associate director for Global Security, the Office of Strategic Outcomes was created in January 2011 to facilitate closer collaboration and coordination with other national security agencies, such as the Department of Defense and Department of Homeland Security. See the [memo](#) announcing the office. On the internal front, the Lab expanded use of social media tools, LabBook, and introduced a new one, SpigIt, to enhance collaboration and communication inside the LLNL community. SpigIt uses "crowdsourcing" to bring the Lab's diverse disciplines and skills to bear on a specific scientific challenge. Early pilot projects proved successful and received rave reviews from participants.

Team science and collaboration have been a part of Laboratory culture since its founding and 2011 was no different. Development of the open campus promises to expand collaboration with industrial and academic partners to new areas. In his first all-hands address as director, Albright said the Lab has an obligation "to migrate its capabilities to the economic mainstream of the country."

Echoing his predecessor, Albright has said it is the people who bring the Laboratory recognition as a global leader in science and technology. Proving once again their influence on the S&T community, employees garnered numerous awards or received recognition for their exceptional contributions, both in S&T and Laboratory operations. See a summary of awards and recognition on pages 27 – 31.

(Editor's note: On the following pages are selected highlights from 2011 divided into Science and Technology, Operations, People, and Awards and Recognition.)



LLNL researcher John Chang tests a prototype intracranial hematoma detector on a human skull. Work on this project won an award for excellence in technology transfer from the Federal Laboratory Consortium.



Scientists find a way to combat antibiotic resistant bacteria by using the bacteria's own genes. (Video.)

SCIENCE & TECHNOLOGY

- If a rogue improvised nuclear device explodes in a city, the best tactic is to stay inside your home and wait. That's the recommendation of the Lab's Brooke Buddemeier, who worked on a multiagency modeling effort funded by the U.S. Department of Homeland Security. [Read more](#)

- LLNL and Lawrence Berkeley National Lab scientists develop a way to sneak nano-sized probes inside cell nuclei where they can track life's fundamental processes, such as DNA repair, for hours on end. [Read more](#)

- LLNL and Stanford University researchers suggest that the early building blocks of life could survive hitching a ride to earth on a comet. Their computations find that the impact of the shock waves from a comet that crashed into Earth millions of years ago could have produced amino acids. [Read more](#)

- LLNL and UC Santa Cruz researchers find that there is an extensive biological community living in basalt, the porous volcanic rock beneath the deep ocean floor. It's a deep water home to millions of microbes and lies well beneath the water at the ocean's upper levels. [Read more](#)

- Using seawater and calcium to remove CO₂ at its source in a natural gas power plant's flue stream and then pumping the resulting calcium biocarbonate in the sea could be beneficial to the oceans' marine life, according to a study by LLNL scientist Greg Rau. [Read more](#)

- A group of utility, energy-related companies and national laboratories, including LLNL, signs deals to research and build a new cleaner-energy infrastructure in China as part of a government summit in Washington. [Read more](#)

“ Quotables ”

Our Laboratory is equipped to carry out new ideas on short notice. This was the right thing to do given the nation's needs.”

– Lab researcher Peter Beiersdorfer, on the development of an idea to plug oil wells

- A portable nuclear magnetic resonance (NMR) device used for the detection of chemical warfare agents and developed at Livermore now fits inside a briefcase. The new device, developed by a research team from the Laboratory's Physical and Life Sciences Directorate, can be transported into the field for on-the-spot analysis of



LLNL electronics engineer Vincent Riot holds the polymerase chain reaction module of the Environmental Sample Processor, a robotic biochemistry lab that can be placed in the ocean to analyze genetic material.



(From left) Mel Scott of VSP accepts boxes of eye-wear donated by Lab employees from Lynn Soderstrom, Marie Teuscher and Bob Bills.



Senior officials from the U.S. Strategic Command and the U.S. Air Force tour LLNL facilities, along with meeting with Lab officials, including Bruce Goodwin (far left), principal associate director for Weapons and Complex Integration, and George Sakaladasis (fourth from the right), of the Lab's National Security Office.

potential chemical warfare agents or other hazardous chemicals. [Read more](#)

- New research by Laboratory scientists in collaboration with a Washington University researcher suggests that a new "mud recipe" using materials such as cornstarch to create a more viscous formula for plugging up a spewing oil well might just work in the future. [Read more](#)
- Researchers at LLNL discover a new way to combat antibiotic resistant bacteria by using the bacteria's own genes and processes against it. [Read more](#)

PEOPLE

- Robert Mellors of the Atmospheric, Earth and Energy Division is elected to a two-year appointment on the executive committee of the Western North America InSAR (WInSAR) Consortium. [Read more](#)
- A memorial service is held Feb. 4 for Norman "Shawn" McKinley, an LLNL Protective Force Division officer, who died Jan. 31 at the Laboratory. [Read more](#)
- Senior officials from the U.S. Strategic Command (STRATCOM) and the U.S. Air Force visit the Laboratory to familiarize themselves with the Lab's capabilities. [Read more](#)
- Los Alamos National Laboratory Director Michael Anastasio, also a former LLNL director, announces to the LANS Board of Governors his decision to step down as LANL director effective June 1. [Read more](#)

OPERATIONS

- Director George Miller announces the formation of the Office of Strategic Outcomes (OSO) to focus mission enhancement with an institutional strategy

“ Quotables ”

"This is one of the largest donations we've had. The amount of glasses the Lab has collected is phenomenal."

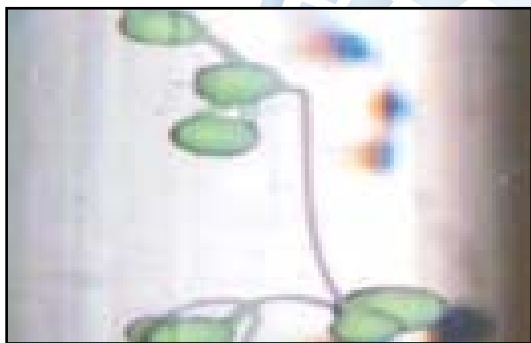
– Mel Scott, of VSP, the company that sponsors the Eyes of Hope program

for national security sponsors, with unity of effort and dedicated resources. [Read more](#)

- More than 1,868 prescription glasses, readers, sunglasses and parts of glasses collected from Lab employees are handed over to the Eyes of Hope program. The donations are designed to help the more than one billion people around the world -- who can't afford glasses -- obtain them. [Read more](#)
- Director George Miller opens his first all-hands update of 2011 by reviewing what is known and what remains to be clarified about the DOE/NSA salary freeze, initiated by Energy Secretary Steven Chu in December in 2010. [Read more](#)
- Employees notice a new look to two of the vehicles that provide taxi shuttle service at the Lab's main site: As the banners on these taxis indicate, they run on pure hydrogen. This results in near zero CO2 emissions at the point source. [Read more](#)



LLNL scientist Greg Rau studies how to use seawater and calcium to remove CO₂ at its source in a natural gas power plant's flue stream and then pump the resulting calcium biocarbonate in the sea.



The research team that developed the idea for stopping oil well leaks observe strange arrangements of globules descending the oil column.

SCIENCE & TECHNOLOGY

- In a study, Livermore scientists and an international research team use the world's first hard X-ray free-electron laser – the Linac Coherent Light Source at SLAC National Accelerator Laboratory – to demonstrate a shortcut for determining the 3-D structures of proteins. [Read more](#)
- Compact Particle Acceleration Corporation (CPAC), which licensed a revolutionary proton therapy technology from the Laboratory, demonstrates proton acceleration with its compact particle accelerator technology. Proton therapy is a new technology that can be used to treat cancer. [Read more](#)
- LLNL's Jane Long leads a team of 50 scientists, engineering and utility professionals to create a study titled, "California's Energy Future." [Read more](#)
- LLNL experiments that collide two jets of positron-electron pairs may help physicists identify the source of gamma-ray bursts in distant galaxies. Researchers detect these intense flashes of light about once a day, but their source is unknown. [Read more](#)

PEOPLE

- Gen. Keith Alexander, director of the U.S. Cyber Command and National Security Agency chief of central security service, visits the Lab. He is briefed on global security missions and cyber security R&D. [Read more](#)
- Lt. Gen. Christopher D. Miller, deputy chief of staff, Strategic Plans and Programs, United States Air Force, visits the Laboratory for briefings on nuclear weapons, conventional weapons, NIF, high-

“ Quotables ”

“Sometimes we present ourselves as a nuclear weapons laboratory looking for work. That is not what we are. We also are not a contract facility. Instead, we are a multi-sponsor federally funded research and development center, managed by NNSA, that responds to the needs of the nation, anticipates the future and delivers solutions.”

– Parney Albright, discussing LLNL's Office of Strategic Outcomes

performance computing, surveillance and cyber defense activities. [Read more](#)

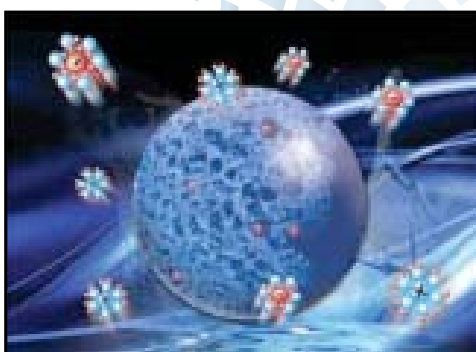
OPERATIONS

- Lab employees and other members of the LLNL workforce can now complete their required foreign national contact reporting online. The Department of Energy (DOE) requires reporting substantive professional or personal relationships, with foreign nationals affiliated with sensitive countries. [Read more](#)
- Feb. 14 marks the roll out of phase I of LLNL's new pilot comingled recycling and composting program. [Read more](#)



LLNL researchers Steve Payne and Nerine Cherepy develop new materials for radiation detection.

[Read more](#)



Lab research in the field of carbon aerogels is featured in *Energy and Environmental Science*.

SCIENCE & TECHNOLOGY

- *Innovation* magazine highlights the work of three Laboratory researchers, whose research is focused on new materials for radiation detection. [Read more](#)
- Lab research in the field of carbon aerogels is featured in *Energy and Environmental Science*. Because of their unusual chemical and textural characteristics, carbon aerogels are promising materials for use as electrode materials in supercapacitors and rechargeable batteries, advanced catalyst supports, adsorbents and thermal insulation. [Read more](#)
- Two scientists in the Chemical Sciences Division, Ian Hutchison and postdoc Ben Jacobsen, are authors of one of the "Top-50" most cited articles published by the journal *Earth and Planetary Science Letters* during the past five years. The paper was published in 2008. [Read more](#)
- Lab researchers publish a report on materials-driven product and processing technologies with near-term potential for energy efficiency, use, access and business opportunities. The complete report is commissioned by the Department of Energy Industrial Technologies Program. [Read more](#)
- The Lab's Michael Pasyanos and a Penn State colleague unveil high-resolution surface-wave maps detailing the seismic structure of Africa and Arabia, based on measurements from seismic stations around the region. [Read more](#)

PEOPLE

- Dona Crawford, associate director for Computation, speaks to the Commonwealth Club in San Francisco on the topical question: Has China surpassed the United States in supercomputing? [Read more](#)
- Oakland mayor Jean Quan addresses the Lab as part of Women's History Month. Her talk, "Our History is Our Strength," discusses her views on women in politics, the state of women today and women's access to math and science careers. [Read more](#)

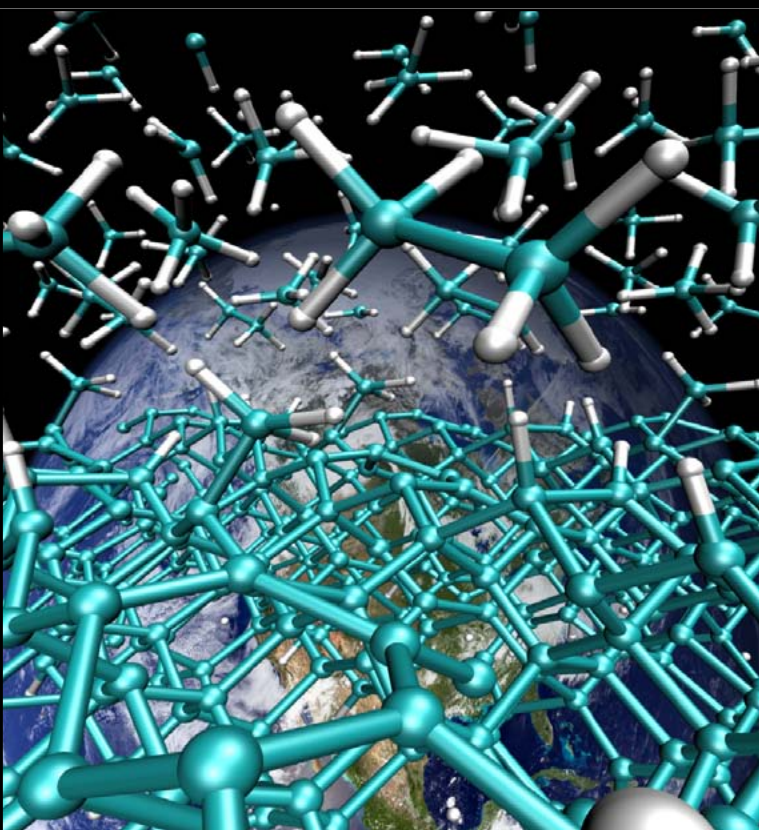
Quotables

"If we are to be partners in a world of global competition, I want us to come from a position of strength based on the best U.S. industry, academia and the national labs have to offer. That's what put us and has kept us in the leadership role we enjoy today in supercomputing. It's imperative we now begin to push forward on the necessary technology to ensure a continued leadership position."

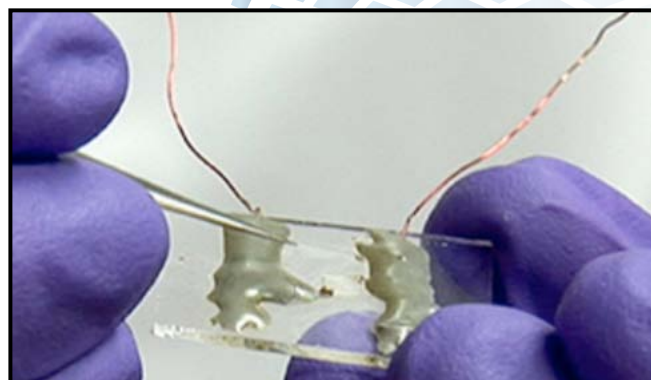
— Dona Crawford, speaking to the Commonwealth Club in San Francisco

OPERATIONS

- The annual Tri-Valley Science and Engineering Fair (TVSEF) sponsored by the Lab draws more than 400 local students in middle and high school who compete for scholarships and cash prizes at the Robert Livermore Community Center. The fair marks its 15th anniversary with a 30 percent increase in participants. Senior sweepstakes winners go on to compete at the Intel International Science and Engineering Fair in Los Angeles. [Read more](#)
- The Livermore City Council votes unanimously to annex land including the Laboratory and Sandia. Through annexation, Livermore hopes to fix its urban growth boundary as well as assist the up-and-coming Innovation for Green Advanced Transportation Excellence Innovation Hub — a regional partnership of more than 30 agencies and organizations in the East Bay, expected to generate 5,000 plus jobs and more than \$1 billion in the region over the next five years. [Read more](#)



A snapshot taken from a first-principles molecular dynamics simulation of liquid methane in contact with a hydrogen-terminated diamond surface at high temperature and pressure.



Livermore researchers develop a battery-less chemical detector. The sensor part of the device is about 2 millimeters in size.

SCIENCE & TECHNOLOGY

- Laboratory researchers announce development of a nanosensor to detect chemicals that relies on semiconductor nanowires, rather than an external power source, such as traditional batteries. Its development could be the first step in making an easily deployable chemical sensor for the battlefield. [Read more](#)

- A new computational study published in the *Proceedings of the National Academy of Sciences* reveals how hydrocarbons may be formed from methane in deep Earth at extreme pressures and temperatures. The thermodynamic and kinetic properties of hydrocarbons at high pressures and temperatures are important for understanding carbon reservoirs and fluxes in the Earth. [Read more](#)

- Laboratory researchers find that soldiers using military helmets one size larger and with thicker pads could reduce the severity of traumatic brain injury from blunt and ballistic impacts. The results come after a one-year study funded by the U.S. Army and the Joint IED Defeat Organization to compare the effectiveness of various military and football helmet pads in mitigating the severity of impacts. [Read more](#)

- Lab researchers, in conjunction with Lawrence Berkeley colleagues, use a combination of experiment and theory to characterize a fast-changing system in the growing field of warm dense matter physics, an emerging field of science that bridges the gap between condensed matter and plasma physics. It exists in the Earth's core, giant planet interiors and at the edge of the Inertial Confinement Fusion capsule that will be in the National Ignition Facility. [Read more](#)

- Ten women scientists from the Lab meet with 45 local high school girls as part of "Dinner with a Scientist," a popular annual event that brings togeth-

“ Quotables ”

“Eighty-five percent of energy use in this country is focused on fossil fuels. We need to transform the energy picture to add new non-fossil resources while maintaining and optimizing our large reserve of fossil fuels.”

– Energy and Environmental Security Program
Director Doug Rotman, during a seminar
presented by the Office of
Strategic Outcomes

er local students and working scientists. [Read more](#)

- The High Explosives Applications Facility (HEAF) activates an additional, higher velocity research gun to be used for shock physics research. Such guns are used to study the behavior of materials under sudden high pressure and temperatures. [Read more](#)

- Lab researchers and collaborators launch a study of the wakes created by wind turbines for the purpose of improving the efficiency of wind farms. [Read more](#)

- The Laboratory, in collaboration with Los Alamos and Sandia national laboratories and the Air Force Research Laboratory, continues its work to improve the nation's capabilities for detecting and monitoring threats to U.S. space operations. A team of Livermore experts designs a comprehensive set of tools called



LLNL mechanical engineer Mike King (left) and physicist Willy Moss watch a compression test of a helmet pad.



Willie Moss, LLNL physicist, explains the findings, as pictured above (Click here to see video.)

the Testbed for Space Situational Awareness, simulating the positions of objects in orbit and detection by telescope and radar systems. [Read more](#)

PEOPLE

- Arthur Balizan, a 33-year veteran of law enforcement, is named to lead the Protective Force Division. [Read more](#)
- Ambassador Tibor Toth, executive secretary of the Comprehensive Nuclear Test Ban Treaty (CTBT) organization, and staff visit the Laboratory for a tour and briefing at the National Atmospheric Advisory Center and an update on noble-gas sampling technology development and other Lab work in support of the CTBT. [Read more](#)
- At an all-hands meeting, George Miller announces he will resign as Lab director, effective October 2011. [Read more](#)

OPERATIONS

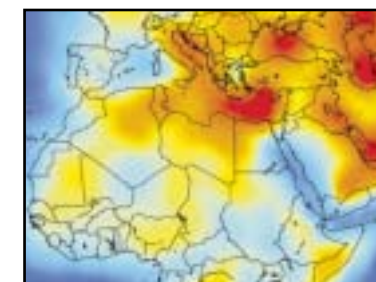
- The Laboratory begins allowing limited wireless network access in Laboratory-managed devices. [Read more](#)
- The annual Good Friday protest at the Laboratory's West Gate entrance results in the arrest of 33 protestors. [Read more](#)
- The Laboratory begins assisting the United Arab Emirates (UAE) with the implementation of safety, security, and safeguards for its efforts to build a nuclear power plant — something no Middle East nation has ever done. [Read more](#)
- In an effort to save energy, a pilot program begins to replace the heads of street and parking lot light poles with energy-efficient LEDs. [Read more](#)

“ Quotables ”

The key to productivity is innovation. What's new today is a better and deeper appreciation of the intertwining of innovation and manufacturing.”

Ron Bloom, special assistant to the president on manufacturing, addressing a Lab audience, after keynoting a meeting of the Council on Competitiveness Technology Leadership and Strategy Initiative advisory committee on High Performance Computing (HPC), hosted by the Lab

- Director George Miller and various groups of Laboratory employees discuss the quality of the management of science, technology and engineering at the Lab, as well as the contract for managing and operating LLNL, during two days of meetings with the National Academies National Research Council. [Read more](#)



The Lab's Michael Pasyanos and a Penn State colleague unveil high-resolution surface-wave maps detailing the seismic structure of Africa and Arabia, based on measurements from seismic stations around the region.



A diamond aerogel is hammered out of a microscopic anvil.



Clockwise from left, LLNL's Dawn Shaughnessy and Ken Moody shake hands with Livermore Valley Joint Unified School District Assistant Superintendent Cindy Alba and head of finance Susan Kinder after donating \$5,000 to the Livermore High Chemistry Department.

SCIENCE & TECHNOLOGY

- Using a laser-heated diamond anvil cell, Laboratory researchers create a diamond aerogel from a standard carbon-based aerogel precursor. The study appears in the online edition of the *Proceedings of the National Academy of Sciences*. [Read more](#)
- A National Summit on Advancing Clean Energy Technologies is held in Washington, D.C. Among the participants are Laboratory Director George Miller and Deputy Director of Science and Technology Tomás Díaz de la Rubia. [Read more](#)
- In a paper appearing in the *Proceedings of the Royal Society B*, Lab scientist Michael Dillon proposes that virus-infected skin cells could be a source of infectious foot and mouth disease virus aerosols. [Read more](#)

- Lab scientists Tom Slezak and Beth Vitalis present, "The Power of Bioinformatics," one of the popular "Theory to Practice: How Science Gets Done" seminars offered by the Lab and Las Positas college to science majors and faculty at the college. [Read more](#)

OPERATIONS

- Lab cafeterias begin offering new environmentally friendly "to go" containers and cups as a biodegradable alternative to Styrofoam products. [Read more](#)
- A new Scholar Website is introduced by Strategic Human Resources Management to assist summer students in accessing information about student internships, the selection process and housing. [Read more](#)
- The Lab's popular lecture series "Science on Saturday" gains attention online, with approximately 1.4

Quotables

"I am honored to have been given the opportunity to lead this extraordinary institution, to help nurture and expand its capabilities. The ability of the Lab director to make decisions about what science and technology needs to be done is increasingly difficult. It's time to let lab directors manage the laboratories."

– George Miller, addressing the National Academy of Sciences

million downloads of lecture videos during the year. [Read more](#)

- A site planning group conducts vehicular, bicycle and pedestrian traffic counts near East Gate Drive, South Inner Loop Road, Avenue K and South Outer Loop Road, marking the start of planning for the East Campus Improvements Project. [Read more](#)
- The Lab expands its pilot comingled recycling and composting programs to include 17 buildings. [Read more](#)
- The Lab's popular "Get Active" program kicks off for another year. [Read more](#)
- Lawrence Livermore National Security, LLC announces a call for nominations for the annual Community Gift Program to benefit local and area non-profit organizations. [Read more](#)



Tomás Díaz de la Rubia at the National Summit on Advancing Clean Energy Technologies held in Washington, D.C.



From left, George Miller, Scott Groves, Alice Williams and Monya Lane at the ceremony officially opening the ACE facility.

The Lab's Heavy Element Group donates \$5,000 to Livermore High School's Chemistry Department.

[Read more](#)

PEOPLE

- Retired Pakistani Brig. Gen. Feroz Khan, now a lecturer at the Naval Postgraduate School in Monterey, speaks at the Lab about "Pakistan: Between Deterrence & Renaissance." [Read more](#)

- David Hoffman, *Washington Post* contributing editor, author and 2010 Pulitzer Prize winner for nonfiction, provides a talk sponsored by the Global Security Principal Directorate. [Read more](#)

- The 4th stage of the Amgen Tour of California bicycle race starts in downtown Livermore; a first for the city. The route takes the peloton on East Avenue to the Lab, and toward their destination of San Jose. [Read more](#)

- Former Livermore Laboratory scientist Charles McMillan is appointed director of Los Alamos National Laboratory and president of Los Alamos National Security, LLC (LANS), the company that manages and operates LANL for the National Nuclear Security Administration. [Read more](#)

- Don Boyd is appointed Operations and Business principal associate director by Director George Miller after serving in an acting capacity since December 2009. [Read more](#)

- Chris Cross, a Defense Threat Reduction Agency scientist assigned to the Laboratory, and an Army lieutenant colonel who trained hundreds of Afghan cadets at the National Military Academy of Afghanistan, gives a Memorial Day presentation to employees. [Read more](#)

“ Quotables ”

Minorities are becoming the majority. Our country is built on innovation, and that means knowledge of science and technology. Our kids have to be ready.”

– Library Director Isom Harrison, about educational outreach

“This is a place for dialogue to happen, and when the dialogue happens, the magic happens.”

– HPCIC Director Fred Streit, on the opening of the High Performance Computation Innovation Center

- Energy Secretary Steven Chu releases the 2011 Department of Energy Strategic Plan outlining broad, cross-cutting and collaborative goals that stretch across the DOE complex. [Read more](#)



Riders take off in Stage 4 of the Tour of California from downtown Livermore.



President of the Korean Atomic Energy Research Institute (KAERI) Youn Ho Jung and Lab Director George Miller sign a memorandum of understanding (MOU) detailing technical cooperation between KAERI and LLNL.



California Lt. Gov. Gavin Newsom, center, tours the National Ignition Facility. He is accompanied by Lab Executive Officer Ron Cochran, left, and NIF and Photon Science Principal Director Ed Moses, right.

SCIENCE & TECHNOLOGY

- The fourth annual National Nuclear Security Administration Laboratory Directed Research and Development (LDRD) Symposium is held at the University of California Washington Center, with the theme "Innovation Advancing Nuclear Security." [Read more](#)
- A Livermore researcher, along with colleagues from Los Alamos and Oak Ridge national laboratories and the New Mexico Institute of Mining and Technology, find that dimethyl sulfide (DMS) will increase significantly in certain parts of the ocean and decrease in others if the world continues with a business-as-usual fossil fuel dependency. [Read more](#)
- Research conducted by Livermore scientists that determined some of the oldest objects in the solar system formed far away from our sun and then later fell back into the mid-plane of the solar system, lands a top spot in this year's NASA Science Highlights. The research may lead to a better understanding of how our solar system and possibly other solar systems formed and evolved. [Read more](#)
- The Laboratory signs a memorandum of understanding with SWAY, a renewable energy company that has developed floating towers for wind turbines located in deep water. [Read more](#)
- The Advanced Simulation and Computing program at the Laboratory receives new "capacity" computing resources under a contract announced by the National Nuclear Security Administration. [Read more](#)

OPERATIONS

- The Laboratory, along with the rest of the DOE complex, moves toward management systems that use international consensus standards for environment, safety, health and quality. [Read more](#)

Quotables

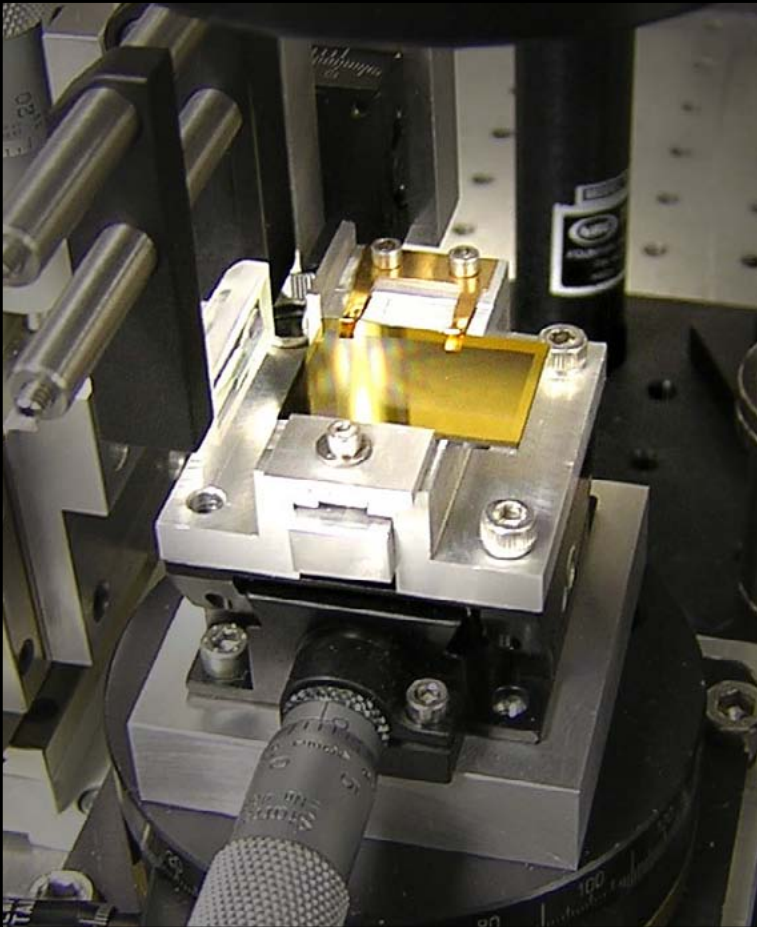
"I've seen some of this exciting data, and it's almost enough to make me reconsider retiring."

– Director George Miller speaking about NIF experiments in high-energy-density stockpile science and basic science, during an all-hands briefing

"Folks, it's going to be a nuclear world, independent of whether you are pro-nuclear or anti-nuclear or agnostic."

– Tom Isaacs, panel member at the World Affairs Council in San Francisco

- A new online crowd sourcing pilot program, Spigit, is launched and aims to generate broad, multidisciplinary input to address a scientific challenge that could lead to new business. [Read more](#)
- The High Performance Computing Innovation Center — the first facility in the Livermore Valley Open Campus that will make the Lab's unique supercomputing expertise available to industry — is dedicated in a ceremony hosted by Laboratory Deputy Director Tom Gioconda and attended by a host of state and local officials. [Read more](#)
- A \$5,000 gift from Lawrence Livermore National Security, LLC (LLNS), the entity that manages the Laboratory, is presented to the Rotary Club of Livermore to help pay the travel expenses of five local students prior to their visit to the city of



An experimental test bed shows the Serrated Light Illumination for Deflection-Encoded Recording (SLIDER) mounted in a multi-axis coupling stage. The device wins an R&D 100 award.



The High Performance Computing Innovation Center is dedicated in June. (Click here to see video.)

Snezhinsk in Russia for a cultural exchange experience.

[Read more](#)

- The Lab holds its annual Safety Fair to commemorate National Safety Month, and opens the on-site event to family members. [Read more](#)
- Director George Miller and LSO Manager Alice Williams cut the ribbon inaugurating the official opening of the state-of-the-art Advanced Composites Engineering Facility in the west wing of Bldg. 321. [Read more](#)
- The Lab launches a pilot internship program — Entrepreneurship Academy — sponsored by the Tri-Valley Community foundation to help student and faculty learn more about moving innovative ideas into the marketplace. [Read more](#)

PEOPLE

- The Lab's Tom Isaacs participates in a panel of experts that discusses the future of nuclear power at the World Affairs Council in San Francisco. [Read more](#)
- Lt. Gov. Gavin Newsom visits the Laboratory for tours and briefings. [Read more](#)
- As the University of California begins to lead the search for the next Laboratory director, a "Lab Day" is held on site to provide the search committee insights into the Lab and its employees, and gather information for evaluating candidates. [Read more](#)
- Four local high school seniors — Rachelle Hamblin and Nicole Allen of Livermore, and Salman Kahn and Niraj Punjya of Tracy — receive the prestigious Edward Teller Science Scholarship, given annually by the Laboratory to graduating seniors who excel in science studies. [Read more](#)
- President of the Korean Atomic Energy Research Institute (KAERI) Youn Ho Jung and Lab Director George

“Quotables”

“We were state of the art 20 years ago. Now with this facility we've come full circle.”

– Scott Groves, team leader on the opening of the Advanced Composites Engineering Facility

Miller sign a memorandum of understanding (MOU) detailing technical cooperation between KAERI and the Laboratory.

[Read more](#)

- Five directors from Russia's national security and research laboratories visit Livermore to learn about the Lab's missions, tour facilities and discuss mutual areas of research. [Read more](#)
- Representing the Lab, Tom Boggess participates in the Greenhorn contest at the annual Livermore Rodeo. [Read more](#)
- The Science Education Program's Kirk Brown, a Tracy High School teacher, is named county “Teacher of the Year.” [Read more](#)



Russian visitors receive an overview of the Lab's programs.



The Large Hadron Collider's (LHC) 17-mile long tunnel.

SCIENCE & TECHNOLOGY

- LLNL signs a memorandum of understanding with the Clean Energy Research Institute in China to conduct joint research and development of clean energy technologies. [Read more](#)
- The Laboratory leads a two-day workshop on procedures, technologies, remediation and return to service of airports following the release of chemical warfare agents or toxic industrial chemicals. [Read more](#)
- The National Science Board gives permission for the Division of Astronomical Sciences at the National Science Foundation (NSF) to conduct a preliminary design review for the Large Synoptic Survey Telescope (LSST) in which Livermore has played a pivotal role. [Read more](#)
- LLNL hosts the 29th annual International Symposium on Lattice Field Theory at Squaw Valley. Researchers from around the world discuss all aspects of physics related to the fundamental particles of nature (quarks and gluons) and the physics of new particles that may be discovered at the Large Hadron Collider. [Read more](#)
- An LDRD project to develop a new technique for detecting and isotopically analyzing trace amounts of uranium and plutonium, called resonance ionization mass spectrometry or RIMS, wins a "best poster award" at the annual NNSA LDRD symposium. [Read more](#)
- IBM's BlueGene/Q next-generation system earns the title of the world's most energy efficient supercomputer on the Green500. [Read more](#)

“ Quotables ”

“We look forward to working closely with our Chinese counterparts to find opportunities to collaborate that serve the needs of both nations.”

—Julio Friedmann, Carbon Management Program Director

“The moon is supposed to be old and have a lunar magma ocean, but our new measurements show the moon is young and did not have a magma ocean.”

—Lars Borg, researcher on a project that analyzed the isotopes of lunar samples

OPERATIONS

- LLNL implements the Occupational Health and Safety Management System (OHSMS) as an overarching framework to guide and integrate its existing health and safety programs. [Read more](#)
- The Laboratory's annual evacuation exercise is held. This site-wide emergency drill helps ensure the safety of employees in the event of an actual emergency, and tests LLNL's emergency response capabilities. [Read more](#)
- LLNL's Work Planning and Control Website is updated and redesigned to provide ready access to tools and best practices that make it easier for employees to plan and perform their work safely and effectively. [Read more](#)



The first of four farmers markets, open to both LLNL and Sandia employees, is held near Sandia's Combustion Research Facility.



Using an instrument originally developed to probe the minute amounts of stellar dust found in meteorites, Kim Knight develops a technique to analyze raw materials to determine the fallout from a nuclear explosion.

- The UC Office of the President appoints a screening task force for the LLNL director search. The task force reviews all nominations and applications received for the position and makes recommendations to the search committee. [Read more](#)

- The first of four farmers markets, open to both LLNL and Sandia employees, is held near Sandia's Combustion Research Facility. This once-a-month market promotes employee work-life balance; a worksite culture of health; and supports local merchants, in-season harvest, and environmental sustainability. [Read more](#)

PEOPLE

- Director George Miller serves as a panelist at a special Innovation Forum hosted by the Livermore Chamber of Commerce. CNBC technology correspondent John Fortt serves as the moderator and later interviews Miller about how the Laboratory's capabilities can help spur economic growth. [Read more](#)

- Lara Leininger is selected to lead the Lab's involvement in the Joint Munitions Program (JMP) with the Department of Defense. [Read more](#)

- Ten employees are recognized for achieving Lean Six Sigma certifications: Darlene Cross, Jennifer Gibson-Greenwood and Mark Sueksdorf as Lean Six Sigma Champions; Chris Ahrens, Teresa Kamakea, Jose Pineda, Nicole Santellano, Chris Serato and Teri Von Hartman as Lean Six Sigma Yellow Belts; and Steve Grace as a Lean Six Sigma Master Yellow Belt. [Read more](#)

- Four outstanding young scientists, winners of the Intel Science and Engineering Fair and the LLNL-sponsored Tri-Valley Science and Engineering Fair,

“ Quotables ”

“The question was, ‘Can we see plutonium and uranium in a real fallout sample?’ The answer was ‘yes.’ It was a high point for three years of work.”

— Kim Knight, co-developer of RIMS

“This agreement will provide a platform for the Laboratory and IFN [Instituto de Fusion Nuclear] to build on a decades-long tradition of common research in areas related to high-energy-density science, inertial confinement fusion, inertial fusion energy, and basic science.”

—Tomás Díaz de la Rubia, LLNL deputy director for science and technology

visit the Laboratory, where they meet with Lab scientists and tour the National Ignition Facility and other facilities. [Read more](#)

- The Navajo Nation's Energy Advisory Committee visits the Laboratory to look at new technologies and discuss a formal partnership to assist the tribe as it develops a Navajo energy policy. [Read more](#)



New Lab research shows that the moon may be millions of years younger than originally believed.



Pejman Naraghi-Arani holds one of the assay chips that the Nanostring Counter uses for detection and quantitation of RNA molecules.

SCIENCE & TECHNOLOGY

- The Joint Actinide Shock Physics Experimental Research (JASPER) facility at the Nevada National Security Site fires a successful shot on a nonradioactive metal target, marking the successful completion of a major recommissioning to enable the facility to operate as a Category 3 nuclear facility. [Read more](#)
- Research by a Laboratory scientist and international collaborators indicates that the moon and Earth may be millions of years younger than originally thought. Isotopic analyses of lead, samarium, and neodymium found in ancient lunar rocks point to an age of 4.36 billion years instead of 4.5 billion years. [Read more](#)
- Laboratory researcher Pejman Naraghi-Arani and his team of university and industry collaborators are awarded \$2.4 million from the National Institutes of Health, under the Partnerships for Biodefense Program, to develop assays for rapidly detecting 35 category A, B, and C viral pathogens (e.g., Ebola, Marburg). [Read more](#)
- Three LLNL proposals win \$1.4 million in funding from DOE's Office of Nuclear Physics for applications of nuclear science and technology. This figure represents 80 percent of the funding available to national laboratory teams. [Read more](#)
- LLNL and Spain's Instituto de Fusion Nuclear (IFN), a research institute of the Universidad Politecnica de Madrid, sign a memorandum of understanding to engage in joint nuclear fusion research and promote the exchange of personnel between the two laboratories. [Read more](#)

OPERATIONS

- Under the theme "The American Experience," the 13th annual Diversity Day on the Green is celebrated. [Read more](#)

Quotables

"This product will help prevent one of the main things a terrorist group would want, which is to overwhelm emergency response."

— Pejman Naraghi-Arani, project leader for a new NIH-funded assay development effort

- A new e-poster series featuring ways employees can affect positive environmental change makes its debut as part of a Labwide Sustainability Campaign. The "Striving for Sustainability" posters highlight small yet meaningful acts that every employee can perform, at work and at home, to promote a healthy environment. [Read more](#)
- The Office of Strategic Outcomes assembles an online toolkit to help scientists and engineers develop winning proposals. [Read more](#)



Director George Miller sit down for an interview with CNBC's John Fortt to discuss Lab capabilities.



De Rompe y Raja, a Peruvian dance group, performs at the Day on the Green event.

- DOE and NNSA approve LLNL's supplement analysis of the 2005 Final Site-Wide Environmental Impact Statement (SWEIS). [Read more](#)
- A new ethics Website is rolled out. The site pulls together ethics-related policies and guidelines as well as forms for engaging in outside business activity and resources for reporting ethical concerns. [Read more](#)
- About 55 anti-nuclear weapons and anti-nuclear power activists stage a demonstration outside the Lab's West Gate in observance of the 66th anniversary of the dropping of a nuclear weapon on Nagasaki, Japan. [Read more](#)

PEOPLE

- Astrophysicist Bill Craig is selected as director of the Laboratory Directed Research and Development (LDRD) Office. [Read more](#)
- Jorge Castro Morales, summer intern (and now a Laboratory computer engineer), creates Android and iPad apps as a new way to showcase what's happening at NIF to the world. [Read more](#)
- The second annual Cyber Defenders summer program concludes. Through the program, led by Computation's Celeste Matarazzo, 21 students from across the country spend 10 to 12 weeks at LLNL learning about technologies that can be applied to computer security and working with LLNL mentors on cyber security-related projects. [Read more](#)



The Navajo Nation's Energy Advisory Committee visits the Laboratory to look at new technologies and discuss a formal partnership to assist the tribe as it develops a Navajo energy policy.

"A crisis is a terrible thing to waste."

— George Miller, making the point that it isn't until things reach crisis stage that solutions are sought and accepted

"I really like places like Google, but the projects here are going to change the future...I know that what happens at NIF and across the Lab will help the world and that's why I really wanted to be here."

—Jorge Castro Morales, former summer intern and new Lab employee



Computer scientist and former summer intern Jorge Castro Morales creates apps for mobile devices that allow for new and innovative ways for the world to learn about what's happening at NIF.



The Lab's Mike Carter, center, talks with first responders at ground zero days after the 9/11 attacks.



Marianne Ammendolia and Morgan Burks examine the next-generation radiation detector, GeMini.

SCIENCE & TECHNOLOGY

- *Newsline* runs a series of articles looking back at the Lab's response immediately following the Sept. 11 attacks. [Read more](#)

- The Lab's second in the series of stories focuses on the Laboratory's role in establishing BASIS — the Biological Aerosol Sentry and Information System — and BioWatch. [Read more](#)

- The third in the series of articles looks at the Lab's contributions to radiation detection. [Read more](#)

- Another article in the series looks at the Lab's role in protecting the nation against bioterrorism. [Read more](#)

- One of the articles focuses on the role the Laboratory played in establishing the Department of Homeland Security. [Read more](#)

- The Laboratory holds a ceremony in the Bldg. 123 auditorium to honor those who lost their lives on 9/11 and the contributions Lab employees made in response to the attack. [Read more](#)

- The Laboratory receives \$890,000 from DOE's Office of Energy Efficiency and Renewable Energy to help accelerate geothermal energy technology. [Read more](#)

- Using acceleration 1 trillion times faster than a jet fighter in a maximum turn, Laboratory researchers gain new insight into dynamic compression of aluminum at ultra-high strain rates. [Read more](#)

- It may be more difficult for obese people to lose fat because the "turnover" rate is much slower for those over-

“ Quotables ”

“We were told, ‘We can’t tell you where you’re going or when you will return.’”
– Tom Slezak on responding to the 9/11 attacks on Washington, D.C.

“To receive such recognition at this stage of my career is a great honor. This award is especially gratifying as it not only recognizes scientific achievement, but also the importance of this research to the nation.”
– Greg Bronevetsky on winning the PECASE award

weight than average weight individuals, according to new research by the Laboratory's Bruce Buchholz. [Read more](#)

- In a unique experiment, Lab researchers use the Omega Laser Facility at the University of Rochester to make precise measurements of a fundamental nuclear process. [Read more](#)

- The first experiments to time multiple, spherically converging shock waves in cryogenically cooled liquid deuterium are described by National Ignition Campaign researchers in the cover article in the September issue of *Physics of Plasmas*. [Read more](#)



LLNL biologist Crystal Jaing holds a fluorescently-labeled viral DNA sample onto the Lawrence Livermore Microbial Detection Array as fellow biologist James Thissen watches.

PEOPLE

- The African-American Body of Laboratory Employees (ABLE) awards its annual scholarships to six graduating high school seniors and college students. [Read more](#)
- The Lab's Bruce Warner, associate director at large and principal deputy for Global Security, transitions his early water experiences into ones that are not only more vibrant but have become one of his life's passions: underwater photography. [Read more](#)
- A poignant ceremony is held near the Superblock to commemorate the lives lost on Sept. 11, 2001 in New York City, the Pentagon, Washington, D.C. and Pennsylvania. [Read more](#)
- The Director's Search Committee and the screening task force solicits nominations and applications for the Laboratory director from many sources. [Read more](#)
- Monica Borucki, a scientist in the Lab's Biosciences and Biotechnology Division, wins a one-year \$415,000 contract from the Defense Threat Reduction Agency for a research project that will study how to better determine the origin of a virus. [Read more](#)
- Maj. Gen. William Chambers, U.S. Air Force assistant chief of staff for strategic deterrence and nuclear integration, visits the Lab. [Read more](#)
- State Sen. Alex Padilla, Senate consultant Jacqueline Kinney and representatives from PG&E and the energy industry visit the Lab for a briefing on the California Energy Systems for the 21st Century (CES-21) project. [Read more](#)
- Laboratory employees celebrate and honor members and families of the 528th Squadron "Flying Tigers" (aka Dragon Flies) from World War II, who visit and tour the Lab. [Read more](#)

"Where we weren't necessarily worried about an attack prior to 9/11, we were worried about an attack after 9/11. We were concerned about countries getting materials they shouldn't have prior to the attacks, and after we were concerned about terrorist organizations obtaining and actually using them. But while the concerns were very different in focus, the detection technologies themselves actually didn't change much — the application changed."

– Steve Kreek, leader of LLNL's Nuclear Detection and Countermeasures Research Program, discussing evolving radiation technology.

- Members and friends of the Lawrence Livermore Laboratory Women's Association (LLLWA) meet for the annual membership and scholarship fundraising luncheon at Cedar Mountain Winery. [Read more](#)
- The Laboratory's Ombuds Program celebrates its 40th anniversary by introducing a new group of graduates of the program. [Read more](#)
- Out of the FIRE and into the INFERNO is the idea behind a cyber security exercise hosted by the Laboratory that brings to-



John Grosh of Computation briefs State Sen. Alex Padilla, Senate consultant Jacqueline Kinney and representatives from PG&E and the energy industry on the California Energy Systems for the 21st Century (CES-21) project.



Instrument used to measure scattered nuclei is pictured during installation at the Omega Laser Facility.

gether the National Nuclear Security Administration's elite cyber responders. [Read more](#)

- The Lab and Las Positas College offer the second annual "Science and Engineering Seminar Series — Theory to Practice: How Science Gets Done." [Read more](#)
- Trish Damkroger, deputy associate director for Computation, is elected as the general chair of SC14, the 2014 edition of the international supercomputing conference to be held in New Orleans, La. [Read more](#)
- Lab physicist Dean Wilkening, along with Stanford colleagues William Perry and David Holloway, and retired Major Gen. Garry Schnelzer (USAF), meet in Brussels in early September with the Russian ambassador to NATO. [Read more](#)

OPERATIONS

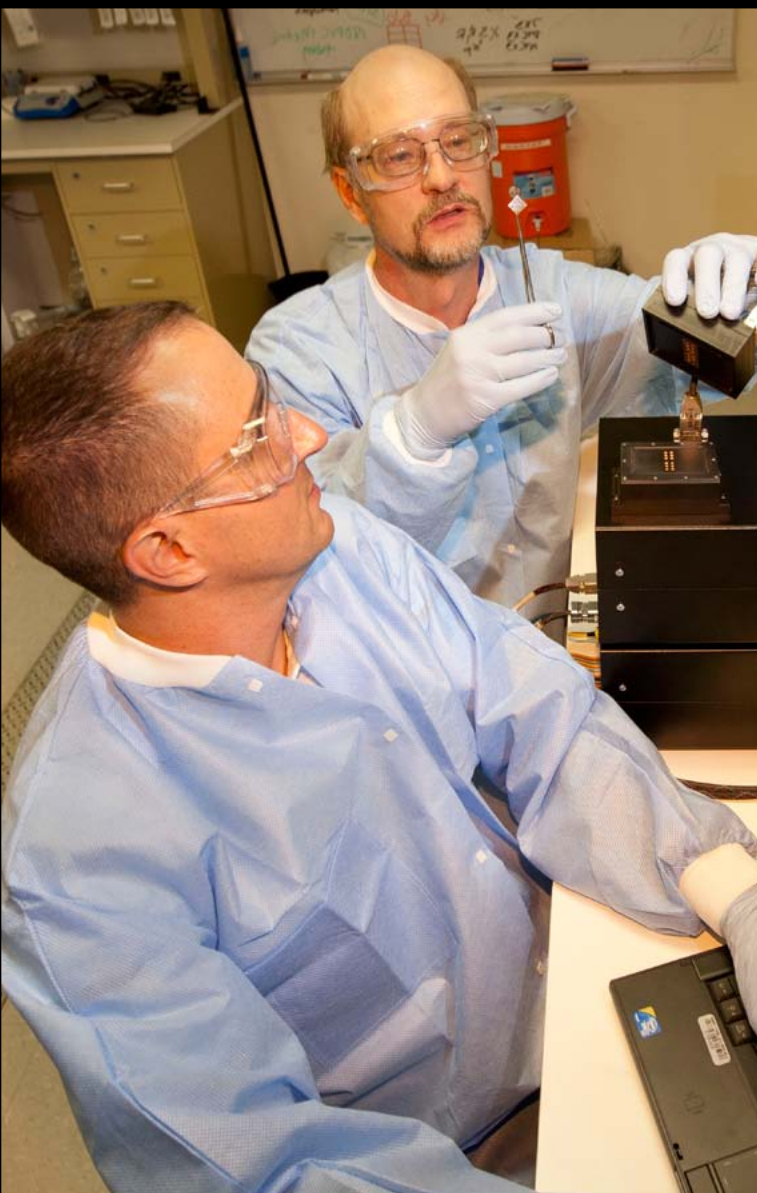
- The Lab removes 90 percent of its Category I and II inventory of nuclear material, which requires the highest level of security protection, to other distant sites. [Read more](#)
- The Lab's Health Services Department offers flu clinics. [Read more](#)
- The new Striving for Sustainability ePoster series continues with a focus on green chemistry and environmentally friendly purchasing practices. [Read more](#)
- The Health Services Department offers an update of services to assist Lab employees who may have concerns about the effect of workplace exposures during pregnancy or breastfeeding. [Read more](#)
- The High Pressure Facility, which Engineering has operated continuously since the late 1960s in Bldg. 343, moves to

Bldg. 691, room 120 as part of the facility consolidation effort. [Read more](#)

- As part of the Spigit crowdsourcing program, a challenge is launched on how the Department of Defense can cut its operational costs. [Read more](#)
- To kick-off the season of giving, the first "At HOME in our Community" project features Goodwill Industries. [Read more](#)
- Lawrence Livermore National Security, LLC (LLNS) the contract manager for the Laboratory, announces the recipients for the 2011 LLNS Community Gift Program. These gifts total \$100,000. [Read more](#)
- Employees are invited to post innovative ideas for flagship ST&E facilities and capabilities on a new Spigit Website challenge. [Read more](#)
- The Laboratory looks for employees' assistance in recruiting top candidates for positions that are open through the Employee Referral Bonus Program. [Read more](#)
- Employees receive a "Personal Benefits Statement," which offers a snapshot of the total value of pay and benefits and an outlook on retirement. [Read more](#)
- Several important changes are made in the investment lineup for the Lawrence Livermore National Security, LLC (LLNS) 401(k) Savings and Retirement Plans. [Read more](#)

Christine Wente, guest speaker at the LLLWA scholarship fundraiser, talked about the wine industry and her family's role in the Livermore Valley.





Mechanical engineer Reg Beer (right) and electronics engineer Gary Johnson test a new polymerase chain reaction (PCR) instrument developed at the Laboratory.

SCIENCE & TECHNOLOGY

- Researchers at the Laboratory receive \$3 million from the National Institutes of Health to acquire a new biomedical accelerator mass spectrometry (bio-AMS) instrument. The instrument will provide faster analysis for medical and other biological research. [Read more](#)
- The Laboratory, working with Loyola University, wins a \$3.5 million grant from the National Institutes of Health to help develop a new anthrax vaccine. [Read more](#)
- Mechanical engineer Reg Beer and electronics engineer Gary Johnson test a new polymerase chain reaction (PCR) instrument that can process biological samples in less than three minutes. [Read more](#)
- An international team including three LLNL researchers announces that for the first time the spatial and temporal coherence of a single femtosecond X-ray pulse, generated by the first hard X-ray free-electron laser (XFEL), has been measured. [Read more](#)
- The 2011-12 Laboratory Directed Research and Development (LDRD) project funding is approved. Approximately 8 percent of the Laboratory's funding is earmarked for LDRD projects. This year the total is \$97 million. [Read more](#)
- The Laboratory issues a call to energy businesses of all sizes for proposals to collaborate with LLNL teams of experts in advancing energy technology through the use of high performance computing (HPC). [Read more](#)
- Lab researchers Walid Younes and Daniel Gogny co-author a paper in *Physics Review Letters* that details a major physics result in a project funded by a \$695,000 grant from the American Recovery and Reinvestment Act (ARRA). [Read more](#)
- Working with Gavin Crooks at Lawrence Berkeley

“ Quotables ”

“When I set out to do this, people said it would never work... They gave mechanical reasons or enzyme kinetic reasons. But I answered, ‘nobody really knows.’ ”

– Reg Beer on new rapid polymerase chain reaction DNA analysis technology

“AMS fills a special niche in the biomedical field because it can measure very low concentrations of drugs with extreme accuracy, and that's important for helping to understand how biology works. However, its real utility hasn't been fully utilized because of a variety of difficulties. This new technology really moves AMS to the next level.”

– Ken Turteltaub, principal investigator, NIH award and leader of the Lab's bioAMS efforts

National Lab, David Minh at Argonne, and John Chodera from the University of California, Berkeley, LLNL's Jerome Nilmeier co-authors a paper that introduces a new class of Monte Carlo moves based on nonequilibrium dynamics. The paper appears in the September issue of *Proceedings of the National Academy of Sciences*. [Read more](#)

- A Laboratory team announces it has re-invented the



Runners are off to a good start at this year's Run for HOME.



Ted Ognibene analyzes data at the Lab's NEC 1-MV tandem accelerator at the Center for Accelerator Mass Spectrometry (CAMS).

soft X-ray spectroscopy of the highly radioactive actinides with a new, unique spectrometer. [Read more](#)

- Livermore scientists and international collaborators announce they have developed a new tool that will help scientists better represent the clouds observed in the sky in climate models. [Read more](#)

- Seokho Hong and his sister Inyoung Hong were the first and second place winners, respectively, of the Tracy High School contest based on the Lab's climate simulation tool. [Read more](#)

- Lab employees are challenged to help think of ways to better predict how drugs will behave in humans in a new Bio Spigit challenge. [Read more](#)

- The first experiments to time multiple, spherically converging shock waves in cryogenically cooled liquid deuterium are described by National Ignition Campaign (NIC) researchers in the cover article of the September issue of *Physics of Plasmas*. [Read more](#)

PEOPLE

- The selection of Parney Albright as the new director of the Laboratory is announced in an all-hands meeting by Norm Pattiz, chairman of the Board of Governors of Lawrence Livermore National Security and a regent of the University of California. [Read more](#)

- Energy Secretary Steven Chu comes to the Laboratory for a meeting of the Secretary of Energy Advisory Board (SEAB). [Read more](#)

- Lab Physicist Kennedy Reed is elected to the executive board of the International Council for Science (ICSU). [Read more](#)

- Ken Turteltaub is named Biosciences and Biotechnology division leader.

“ Quotables ”

“I spent most of my career working for pharmaceutical companies. Working at the Lab is like a dream come true for me because I've been able to come up with some interesting ideas and do the science necessary to turn them into tools that can impact global health, especially in under-developed countries.”

– Paul Hoeprich, Lab scientist on the team developing Nanolipoprotein (NLP) technology

“In an era of fierce global competition in the clean energy sector, high performance computing can stimulate the rapid advancement of U.S. clean energy technologies.”

– Tomás Díaz de la Rubia, LLNL deputy director for Science & Technology

- Jessica Aguirre, news anchor of NBC Bay Area News, presents “The Latino Achievement Gap,” to a full auditorium in Bldg. 543, as part of the Lab's annual Hispanic Heritage Month celebration. [Read more](#)



Parney Albright address employees at an all-hands meeting after the announcement of his appointment as the 11th Lab director.

OPERATIONS

- Livermore officially incorporates 1,022 acres — including the Lawrence Livermore and Sandia labs — into the city boundaries. [Read more](#)
- The University of California releases the UC Laboratory Fees Research Program request for proposals. [Read more](#)
- LLESA and the Laboratory's Occupational Health and Safety Management System launch a "Scribble for Safety" drawing contest for children. [Read more](#)
- Sodexo Government Services, the company that operates the two on-site cafeterias, announces upcoming changes to cafeteria and catering service. [Read more](#)
- Matt Myrick, Cyber Security Program senior computer engineer, makes a National Cyber Security Awareness Month presentation in the Bldg. 123 auditorium, giving an insider's perspective on cyber threats. [Read more](#)
- Wildlife biologist Desty Shoemaker of LLNL produces a compelling article on honey bees. [Read more](#)
- The Center for Accelerator Mass Spectrometry (CAMS) ramps up efforts to reduce the amount of the greenhouse gas, sulfur hexafluoride (SF₆), the facility will need to acquire in the future. [Read more](#)
- The Compensation Group within the Strategic Human Resources (SHRM) Directorate begins a multi-year project to review and update job family matrices. [Read more](#)
- Starbucks coffee stations in both cafes extend their afternoon hours to 3:30 p.m. each day to offer employees a chance to collaborate in the cafeterias well into the afternoon. [Read more](#)

“ Quotables ”

“There's a possibility that the production or delivery of pre-biotic molecules came from extraterrestrial sources. On early Earth, we know that there was a heavy bombardment of comets and asteroids delivering up to several orders of magnitude greater mass of organics than what likely was already here.”

– Nir Goldman, LLNL scientist

“Sometimes we think of ourselves and celebrate achievements as a group or directorate and forget there are other successes across the Lab. We should all feel proud of the Laboratory's accomplishments; its successes are shared successes.”

– Parney Albright in his first all-hands address as LLNL director

- The Library completes the remodel and expansion of its reading areas to facilitate collaboration. [Read more](#)
- The annual “Run for HOME” kicks off the 2011 Helping Others More Effectively, or HOME, Campaign. [Read more](#)



Science presenter Nick Williams conducts a Fun With Science experiment.



The Laboratory participates in Science Discovery Day at AT&T Park.

SCIENCE AND TECHNOLOGY

- A scientific paper by a team of LLNL researchers and engineers is the most-accessed article for the month of August for the international journal *Analyst*. [Read more](#)
- The Laboratory joins more than 170 exhibitors to bring science to the masses during Science Discovery Day at AT&T Park. [Read more](#)
- The Lab releases the most recent energy flow charts, showing that American energy use went back up in 2010 compared to 2009, when consumption was at a 12-year low. [Read more](#)
- In an article in the *Journal of Geophysical Research (Atmospheres)*, an LLNL-lead team of climate scientists determine that in order to separate human-caused global warming from the "noise" of purely natural climate fluctuations, temperature records must cover at least 17 years. [Read more](#)
- Laboratory physicist Stefan Hau-Riege's new book, "High Intensity X-rays -- Interaction with Matter: Processes in Plasmas, Clusters, Molecules and Solids," appears in print. [Read more](#)
- The Laboratory grants Missouri University of Science and Technology researchers \$125,000 to produce a special glass panel that blocks infrared light while allowing ultraviolet light to pass through. The glass will be used so that the light from the 192 lasers within the National Ignition Facility can be converted from infrared light to ultraviolet light before hitting the target. [Read more](#)
- Lab researcher Tom Slezak is one of a team of scientists who developed a microarray technology for detecting bacteria and viruses, which is used to help researchers at the San Francisco Blood Research Institute

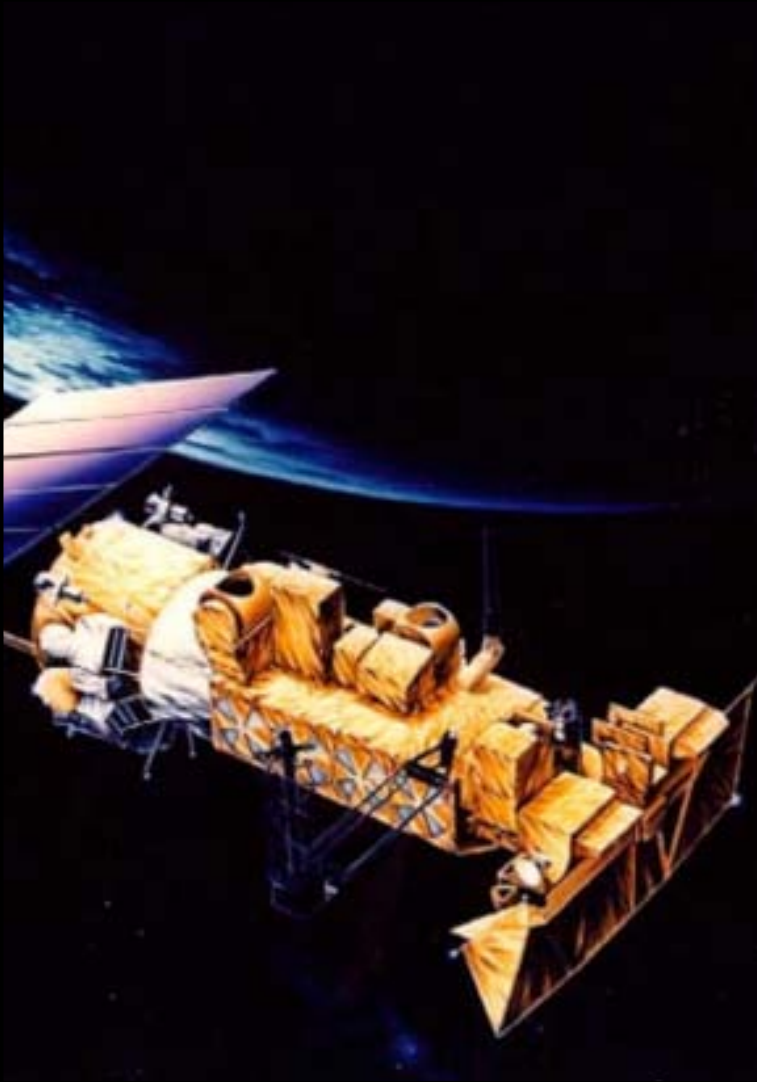
Quotables

"I have been able to do the science I do because of the people that I have had the opportunity to work with and learn from. Much of what happens in science is luck, but at some level you start to make your own luck by being in the right place and knowing enough to ask a good question and doors begin to open."

– Tom Guilderson on winning the E. O. Lawrence Award

take a look at what's really in some vaccines. [Read more](#)

- Lab physicist Morgan Burks is part of a team that built the first mechanically cooled gamma ray spectrometer in deep space that is currently orbiting Mercury on NASA's Mercury Messenger. [Read more](#)
 - Laboratory scientists provide support for the launch of the Mars Science Laboratory with one of the most comprehensive radiological emergency preparedness systems ever developed. [Read more](#)
- ## PEOPLE
- Volunteers from the Laboratory join others from Sandia National Laboratories, University of the Pacific and the community to host the San Joaquin Expanding Your Horizons conference. [Read more](#)



A National Oceanic and Atmospheric Administration (NOAA) weather satellite. Image courtesy of NASA.



Jeanie Haigh of Good News Bears, Livermore, is lost in a sea of stuffed bears donated by Lab employees as part of the "At HOME in Our Community" project.

- Scores of Lab motorcycle riders take to the streets in honor of Veterans Day during Lab Ride VIII. This is the eighth year riders have participated to support charitable organizations. [Read more](#)
- As part of an "At Home in our Community Activity," Lab employees donate 1,683 stuffed animals to the Livermore Good News Bears organization, whose mission is to provide comfort to those suffering trauma, loss, loneliness or illness. [Read more](#)
- Employees applaud, award and thank Protective Force Division Officers Jimmy Gibson and Sherman Collins during a ceremony honoring their heroic efforts in saving the life of an employee earlier this year. [Read more](#)

OPERATIONS

- LLNL's Sitewide Annual Environmental Report 2010 indicates no adverse impact to public health or the environment from Laboratory operations conducted in 2010. [Read more](#)
- LLNL hosts the "Emerging Technologies Conference: Foundational Cyber Technologies" in conjunction with the National Intelligence University and Los Alamos and Sandia national laboratories. [Read more](#)
- Through a \$10,000 gift from Lawrence Livermore National Security (LLNS), the Las Positas College Foundation is enabling biology students to magnify and save images of molecular organisms with the purchase of a digital camera and monitor. [Read more](#)

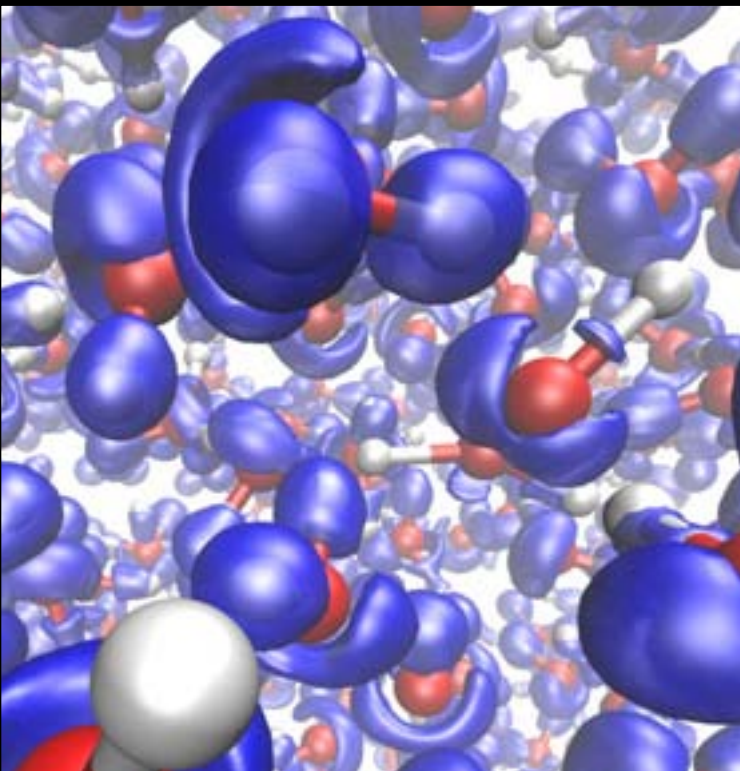
“ Quotables ”

"Looking at a single, noisy 10-year period is cherry picking, and does not provide reliable information about the presence or absence of human effects on climate,"

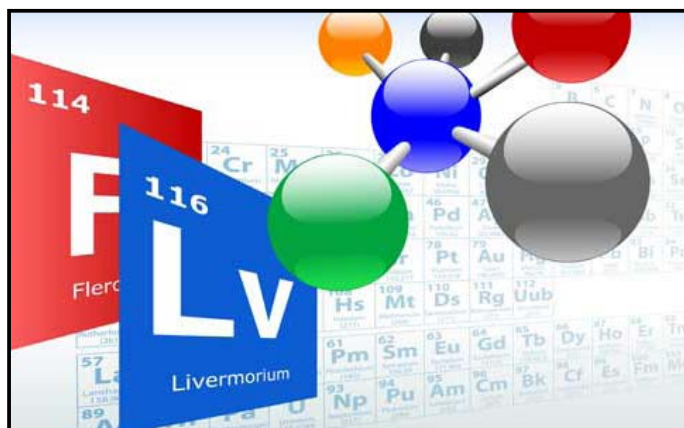
– Benjamin Santer, LLNL climate scientist and lead author of a paper separating "noise" from climate change



EYH volunteers Matt Dickerson (far right) and Pat Chase lead a workshop on testing the properties of hazardous materials.



The Electron Localization Function (ELF), in blue, shows liquid water at pressures and temperatures typical of the liquid layer in Neptune and Uranus.



Livermore and Russian scientists propose new names for elements 114 and 116.

SCIENCE & TECHNOLOGY

- The International Union of Pure and Applied Chemistry (IUPAC) recommends new proposed names for elements 114 and 116, the latest heavy elements to be added to the periodic table. Scientists of the Laboratory — Dubna collaboration propose the names of “Flerovium” for element 114 and “Livermorium” for element 116. [Read more](#)
- In the first university-based planetary science experiment at the National Ignition Facility (NIF), researchers gradually compress a diamond sample to a record pressure of 50 megabars (50 million times Earth's atmospheric pressure). [Read more](#)
- By focusing proton beams using high-intensity lasers, a team of scientists discover a new way to heat material and create new states of matter in the laboratory. [Read more](#)
- The Laboratory announces plans to expand the Tri-Valley Science and Engineering Fair (TVSEF) it has sponsored for the past 15 years. The fair, affiliated with the Intel Corporation, serves students in Alameda County so successfully that it is a model for fairs within neighboring communities.
- The Laboratory announces work with the California Energy Commission to develop ways to increase the amounts of wind and solar generation integrated into California's energy grid. The Lab receives \$1.75 million from the California Energy Commission to conduct research. [Read more](#)
- Recent work by the Laboratory, in conjunction with AWS Truepower, helps balance energy through a project that alerts control room operators of wind conditions and energy forecasts so they can make well-informed scheduling decisions. [Read more](#)

“ Quotables ”

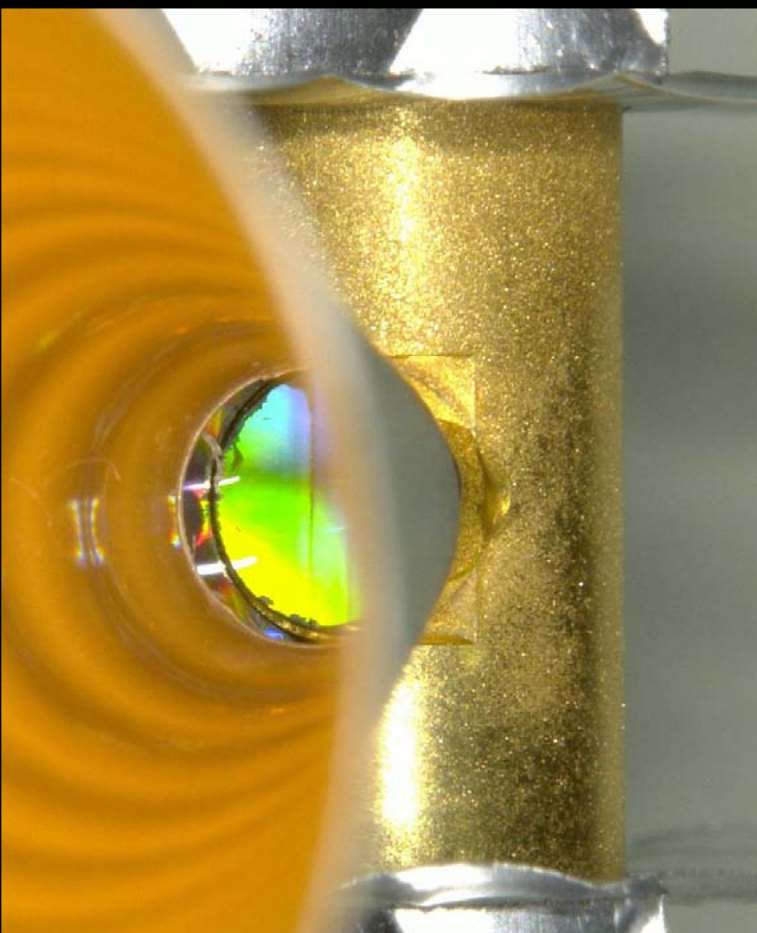
“Proposing these names for the elements honors not only the individual contributions of scientists from these laboratories to the fields of nuclear science, heavy element research, and superheavy element research, but also the phenomenal cooperation and collaboration that has occurred between scientists at these two locations.”

– Bill Goldstein, associate director of LLNL's Physical and Life Sciences Directorate

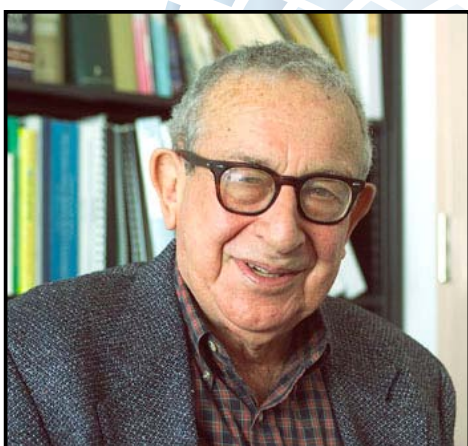
- Lab researcher Sebastien Hamel of the Condensed Matter and Materials Division's Quantum Simulation Group resolves a long-standing issue concerning the evaluation of ionic conductivity in fluids using quantum molecular dynamics (QMD) simulations. [Read more](#)

PEOPLE

- Parney Albright becomes director of the Laboratory. Appointed with the concurrence of DOE, Albright is the 11th director of the Lab since it was established in 1952. Albright also serves as president of LLNS. He succeeds George Miller, who steps down after six years as director and a 40-year career of service to the nation and the Laboratory. [Read more](#)



The diamond target in NIF at the end of a diagnostic cone attached to a gold hohlraum.



Seymour Sack, a prominent physicist, dies at age 82.

- The Laboratory community, from NNSA and the DoD's Strategic Command to the University of California and former Congressional Rep. Ellen Tauscher, paid tribute to George Miller during a celebration of the former director's distinguished career. [Read more](#)
- Brad Hart, who worked as a staff scientist at the FSC from 2004 to 2009, is named the center's director and starts his new position in early October.
- The National Nuclear Security Administration (NNSA) announces that Kimberly Davis will be the new manager of the Livermore Site Office, effective February 2012. She succeeds Alice Williams. [Read more](#)
- Seymour Sack, a prominent physicist who during his 35 years at Livermore emerged as one of the foremost U.S. nuclear weapons designers, dies in Berkeley at age 82. [Read more](#)

OPERATIONS

- Laboratory employees, along with Lawrence Livermore National Security, LLC (LLNS), raise more than \$3.6 million to give to nonprofits serving surrounding communities. Laboratory employees pledge more than \$2.6 million to the HOME (Helping Others More Effectively) Campaign — an annual charitable drive benefiting community/nonprofit agencies in the Tri Valley, San Joaquin Valley and Greater Bay Area. [Read more](#)
- Director Parney Albright announces the release of LSO's Performance Evaluation Report assessing the Laboratory's performance for fiscal year 2011. [Read more](#)
- The Emergency Programs Organization meets with designated program contacts to begin the rollout of the new Facility-Level Base Program. [Read more](#)

“ Quotables ”

“The application of new science and technology to real-world operational needs is something that I'm excited about doing here.”

— Brad Hart, on returning to the Forensic Science Center

- A cyber security awareness exercise conducted by the Lab's Cyber Security Program reveals that a significant number of employees receiving a fake e-mail from an online vendor clicked on a bogus embedded link. [Read more](#)



George Miller receives a standing ovation at the conclusion of a tribute to his career.



Kennedy Reed

Laboratory physicist **Kennedy Reed** is awarded the distinction of fellow of the American Association for the Advancement of Science (AAAS). He is recognized for important studies in atomic theory, and for many successful efforts to increase minority participation in the physical sciences in the United States and Africa. [Read more.](#)

Abdul Awwal is elected a fellow of The Optical Society (OSA), an international society for optics and photonics scientists, engineers, educators and business leaders. [Read more](#)

Lab astrophysicist **Bruce Macintosh** is named a 2011 fellow of SPIE -- the international society for optics and photonics.

Four Laboratory scientists are selected as **2010 fellows of the American Physical Society (APS)**. Among the LLNL fellows are: **Jon Eggert**, a physicist in the Physical and Life Sciences Directorate; **Hye-Sook Park**, a physicist in the inertial confinement fusion and high energy density physics division of the National Ignition Facility; **Ramona Vogt**, a staff scientist in the Physical and Life Sciences Directorate; and **Olgica Bakajin**, a former LLNL chief scientist. [Read more](#)

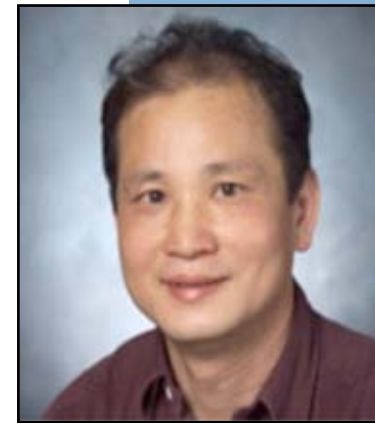
Chemical Sciences Division's **William Pitz**'s research on the combustion kinetics of homogeneous charge compression ignition and diesel fuels earns the top score (out of more than 50 projects) in the 2010 DOE Vehicle Technologies Program Annual Merit Review. [Read more](#)

A team of Lab researchers, working in collaboration with a researcher from the Richmond-based California Department of

“ Quotables ”

“It's truly an honor to be recognized for something that I enjoy doing every day at the Lab.”

— Lin Yang, upon receiving the news of his election as a fellow of the Institute of Physics



Lin Yang

Public Health, wins one of three outstanding poster awards at a **Defense Threat Reduction Agency (DTRA)** conference from among 588 posters. [Read more](#)

Researchers and technology transfer professionals the Laboratory receive two awards for excellence in technology transfer by the **Federal Laboratory Consortium**.

One award is for the development of a prototype intracranial hematoma detector and the other is for module that uses “quantitative polymerase chain reaction” (qPCR) to make copies of genetic material present in water samples from the ocean. [Read more](#)

U-Learn, the Lab's online learning center, is the recipient of a Learning! 100 award by Elearning! Media Group, publishers of Elearning! and Government Elearning! U-Learn placed No. 9 out of 40 for public sector organizations. In addition, U-Learn contributed to the Lab's recognition as a “best-in-class” performer.





Ben Santer



Tom Guilderson

mance organization, which represents the top 20 percent of all organizations. [Read more](#)

Climate scientist **Ben Santer** is elected a member of the National Academy of Sciences for his research on human-induced climate change. [Read more](#) He also is named a fellow of the American Geophysical Union. [Read more](#)

The Laboratory is recognized as one of the Top 25 engineering and technology companies in 2010 by the **Black Equal Opportunity Employment (EOE) Journal**. The publication serves as a resource to African-Americans seeking employment and business opportunities within corporate America. [Read more](#)

NNSA celebrates Earth Day with an awards ceremony to congratulate Laboratory organizations for their pollution prevention and environmental sustainability efforts. **Site 300** is honored for its sulfur hexafluoride reduction project. **Global Security** receives a Best in Class Award for its paperless e-systems project and **Engineering** wins for its beryllium reduction project in Bldg. 235/231. [Read more](#)

LLNL's **Radiological Triage team** is recognized by the International Atomic Energy Agency's (IAEA) Incident and Emergency Centre for its role in supporting responses to nuclear and radiological emergencies through the IAEA's Response Assistance Network. [Read more](#)

Three Laboratory scientists earn \$7.5 million in funding through the Department of Energy Office of **Science Early Career Research Program (ECRP)**. [Read more](#)

The Lab is honored for its **community and education outreach programs** by two local organizations. [Read more](#)

The **Computation Directorate's Bldg. 451** achieves LEED certification, earning a Silver Level rating. [Read more](#)

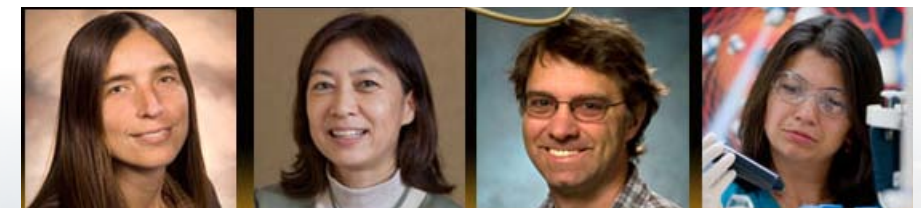
Christina Ren, a senior sweepstakes winner of the 2011 Tri-Valley Science & Engineering Fair sponsored by LLNL, wins a special award at the Intel International Science and Engineering Fair held in Los Angeles. [Read more](#)

The Heavy Vehicle Aerodynamic Drag Project, led by **Kambiz Salari** at the Lab, is awarded an HPC Innovation Excellence Award. [Read more](#)

A team of **Lab computer scientists** and a team of engineers win awards from the trade journal *R&D Magazine* for developing advances among the top 100 industrial inventions worldwide for 2010. [Read more](#)

The Laboratory receives one **Environmental Sustainability (ES-tar)** award and an honorable mention from the U.S. Department of Energy (DOE). [Read more](#)

Frank Wong is recognized with the Department of Homeland Security Defense Nuclear Detection Office Director's Team Award for his leadership role in the development and multi-agency coordination of the first-ever national strategic five-



Ramona Vogt, Hye-Sook Park, Jon Eggert and Olga Bakajin are selected as 2010 fellows of the American Physical Society (APS).

NEWSLINE: LOOKING BACK AT 2011 AWARDS AND RECOGNITION



Leslie Positeri and Brian Molyneaux accept the Learning100 award at a ceremony held in Alexandria, Va.



year plan for improving the country's nuclear forensics and attribution capabilities. [Read more](#)

Yuan Ping receives the 2011 Katherine E. Weimer Award from the American Physical Society's Division of Plasma Physics. The award recognizes the contribution and potential of women in plasma science. [Read more](#)

Physicist Lin Yang is named a fellow of the Institute of Physics for his contributions to "the advancement of physics as a discipline and a profession." [Read more](#)

Weapons designer and engineer **Chad Noble** receives a NNSA Defense Programs Employee of the Quarter award for designing and analyzing a hydrotest conducted at Site 300's Contained Firing Facility that improved understanding of a use-control technology relevant to the current stockpile and future life-extension programs. [Read more](#)

Crystal Jaing, one of the developers of an LLNL device that could assist in detecting bioterrorism attacks, diagnosing diseases and checking product safety is recognized for her work in science and is inducted into the Alameda County Women's Hall of Fame during the 18th annual awards ceremony in Oakland. [Read more](#)

Randy Pico, a senior superintendent and safety officer in the Engineering directorate, is selected by DeVry University for inclusion in "The Pinnacle," a gold book collection featuring 50 of the university's most successful alumni. [Read more](#)

LLNL wins three awards from the **Federal Laboratory Consortium**: Outstanding Technology Development, for a MEMS-based adaptive optics tomography system for retinal imaging; Technology Transfer Professional of the Year, to Catherine Elizondo; and Outstanding Commercialization Success, for

glycophorin A cell lines that are widely used in heart disease and cancer research. [Read more](#)

Bruce Remington, group leader for material dynamics in the National Ignition Facility Directorate's High Energy Density Experiments, receives the 2011 Edward Teller Medal. [Read more](#)

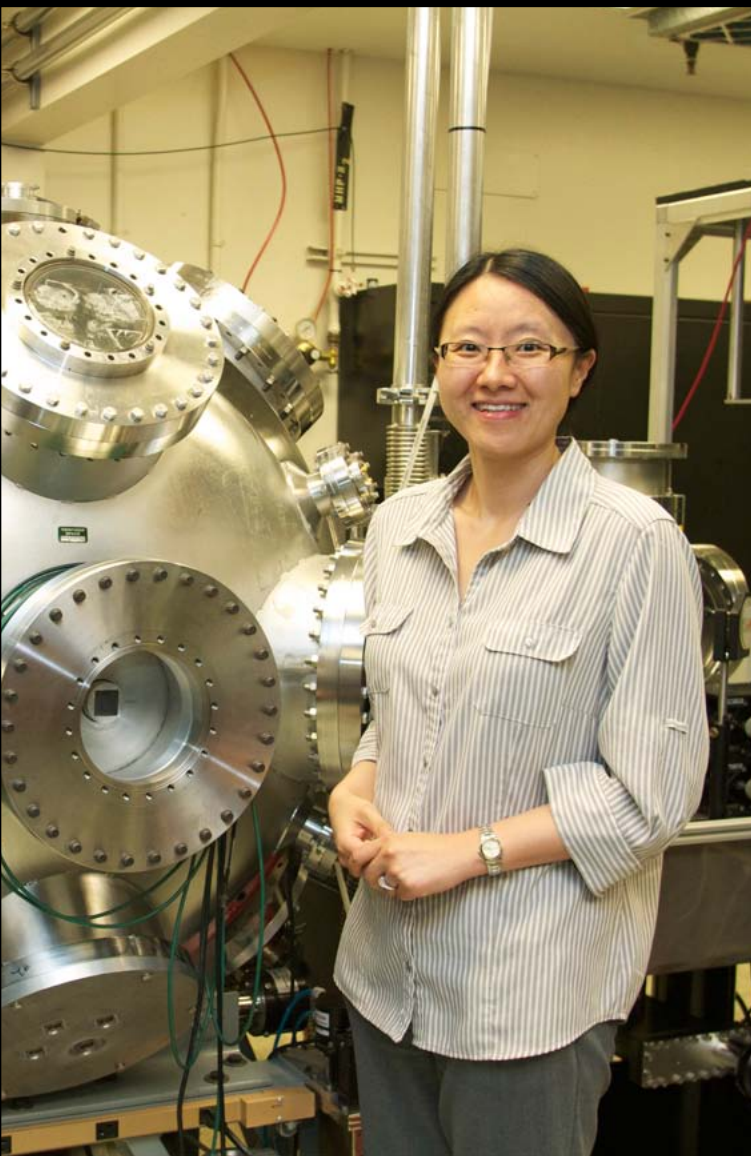
The Laboratory's **Shoot Team** is again on target at this year's Connecticut Special Weapons and Tactics team (SWAT) Challenge, dominating the shooting competition and earning an overall second place out of 33 top East Coast teams. [Read more](#)

The Global Security Principal Directorate holds ceremonies to honor the recipients of the **Global Security 2011 Gold Awards**. The Global Security Gold Awards are intended to recognize singular achievements — work that shows technical achievement well beyond normal expectations, heroic effort, responsibility or accomplishment above and beyond an employee's normal duties, or work with national impact. [Read more](#)



Frank Wong (left) and Kristen Beahm (right) are awarded the Domestic Nuclear Detection Office (DNDO) Director's Team Award by DNDO Director Warren Stern (second from left).

NEWSLINE: LOOKING BACK AT 2011 AWARDS AND RECOGNITION



Yuan Ping stands next to the target chamber in the Europa laser bay, part of the Jupiter Laser Facility.

Lab Director George Miller recognizes 175 employees with the 2011 **Director's Institutional Operational Excellence Award**.

[Read more](#)

Director George Miller and Science and Technology Deputy Director Tomás Díaz de la Rubia recognize **five teams for the best science technology research** and an additional **five teams for the best publications of the year**. [Read more](#)

Prof. Madhav Marathe is selected as the inaugural George A. Michael Distinguished Scholar. The George A. Michael Distinguished Scholar is an annual award offering a noted scientist the opportunity to spend significant time carrying out research at the Institute for Scientific Computing Research (ISCR) at the Laboratory. [Read more](#)

Laboratory computer scientist **Greg Bronevetsky** is named a recipient of a Presidential Early Career Award for Scientists and Engineers for helping advance the state-of-the-art in high performance computing. [Read more](#)

Former Laboratory postdocs **Fotini Katopodes Chow** and **Logan Liu** are among the winners of the 2011 Presidential Early Career Awards for Scientists and Engineers (PECASE). Both were nominated by LLNL. [Read more](#)

The Lab is recognized for reducing the environmental impact of electronics in the annual **Federal Electronics Challenge (FEC)**. [Read more](#)

Charlie Westerbrook is awarded the title of Official American Red Cross Blood Donation Hero, for donating a total of twenty gallons to the American Red Cross since his first donation in 1970. [Read more](#)

U-Learn, the Lab's online learning program available since 1997, is recognized as a 'Best Practice' by DOE's Energy Facility Contractors Group (EFCOG). [Read more](#)

Lab physicist **Steve MacLaren** receives the National Nuclear Security Administration's Defense Programs' Employee of the Quarter Award. [Read more](#)

Lab researchers **Roger Aines, Tom Buscheck, Mark Havstad, Wayne Miller, Christopher Spadaccini and Todd Weisgraber** receive with the Department of Energy Secretary's Achievement Award for their contributions to flow rate calculations for the Macondo Well in response to the Deepwater Horizon oil rig disaster. [Read more](#)

Lab geochemist **Tom Guilderson** is winner of the Department of Energy's prestigious Ernest Orlando Lawrence Award for his ground-breaking radiocarbon measurements of corals, advancements in understanding the paleo-history of ocean currents and ocean processes revealing past climate variability, and the explanation of how physical and biogeochemical oceanic processes affect the global carbon cycle. [Read more](#)

Mike Dunne, director of Laser Fusion Energy at LLNL, is awarded the 2011 Excellence in Fusion Engineering Award by Fusion Power Associates (FPA). [Read more](#)



Global Security 2011 Gold Awards

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