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LLNL



The Community Newsletter of Lawrence Livermore National Laboratory

Winter 2010

HOME's record \$3 million celebrated by community

Last month, elected officials from the Tri-Valley and Tracy, along with representatives of several nonprofit agencies, came to the Lab to show appreciation to employees for their generous contributions received through the 2009 HOME (Helping Others More Effectively) Campaign, the Lab's annual charity drive and major community support activity.

LLNL employees, along with Lawrence Livermore National Security, LLC (LLNS), raised more than \$3 million — a record breaking amount — to give to surrounding communities. The total contribution, \$3,026,151, represents the largest



Elected officials gathered to thank Lab employees for their generous donations made through the 2009 HOME Campaign.

From left: Don Boyd, 2009 HOME Campaign chair; Brent Ives, Mayor of Tracy; George Miller, Laboratory Director and LLNS President; Linda Barton, Livermore City Manager; Don Biddle, Dublin Councilman; Jeff Williams, Livermore Councilman and Abram Wilson, Mayor of San Ramon.

amount ever raised by Laboratory employees during the HOME Campaign's 35-year history, as well as one of the largest nonprofit contributions of any lab in the Department of Energy Complex.

Director George Miller served as master of ceremonies at the gathering, which included city officials from Livermore, Tracy, Dublin and San Ramon, as well as representatives from local nonprofit agencies including American Cancer Society; Tri-Valley Haven; Livermore Valley Education Foundation; Sentinels of Freedom; McHenry House, Tracy Family Shelter; and Boys and Girls Club of Tracy.

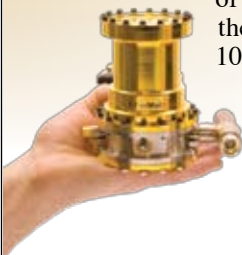
Lab researchers earn eight R&D 100 Awards

Livermore Laboratory researchers earned eight R&D 100 awards at the 47th annual awards ceremony sponsored by *R&D Magazine*.

Established in 1963 by the editors of *R&D Magazine*, the annual R&D 100 awards, often dubbed the "Oscars of Invention,"

The GeMini gamma-ray spectrometer fits in the palm of your hand.

R&D, continued on page 2



Rep. John Garamendi visits Laboratory

Congressman John Garamendi visited LLNL in early January to meet with senior managers and hold a special all-hands meeting with Laboratory employees.

This was Garamendi's first visit to the Laboratory since being elected representative of the state's 10th congressional district in a Nov. 3 special election to succeed former Congresswoman Ellen Tauscher. The 10th congressional district includes both Livermore Laboratory and the Sandia Laboratories California facility.

Since arriving in Washington, D.C., Garamendi has been appointed to serve on the Transportation and Infrastructure and Science and Technology Committees in the House of Representatives.



John Garamendi

Laboratory licenses carbon nanotube technology



Porifera's Chief Technology Officer Olgica Bakajin helped create carbon nanotube technology while at the Laboratory.

Livermore Laboratory has exclusively licensed to Porifera Inc. (<http://poriferanano.com>) of Hayward a carbon nanotube technology that can be used to desalinate water and can be applied to other liquid based separations.

Carbon nanotubes — special molecules made of carbon atoms in a unique

said Olgica Bakajin, who serves as chief technology officer of Porifera. "It's at the right place to take it to the marketplace."

Bakajin formerly worked at LLNL where she was recruited in 2000 as a Lawrence Fellow and then moved on to become chief scientist on the carbon nanotube project along with LLNL chemist Aleksandr Noy, another former Lawrence Fellow. The license was awarded through LLNL's Industrial Partnership Office.

Recently, the Laboratory, Porifera, and UC Berkeley received more than \$1 million from the Department of Energy's Advanced Research Projects Agency (ARPA-E) to develop the carbon capture technique using the nanotubes. ARPA-E's mission is to develop nimble, creative and inventive approaches to transform the global energy landscape, while advancing America's technology leadership. The \$1 million grant is for two years. To learn more see LLNL News Releases at <https://publicaffairs.llnl.gov/news/releases.html>.

"This technology is at the right place to take it to the marketplace."

— Olgica Bakajin

arrangement — allow liquids and gases to rapidly flow through, while the tiny pore size can block larger molecules, offering a cheaper way to remove salt from water. "The technology is very exciting,"

R&D, continued from page 1

identify the 100 most significant, newly introduced research and development advances in multiple disciplines.

The eight Lab technologies receiving the awards were developed by seven teams of LLNL scientists and engineers — and one solo LLNL researcher. They worked with six universities, six industrial firms, four national labs, one medical institute, the U.S. Department of Energy (DOE) and the Defense Threat Reduction Agency.

Among LLNL's winning technologies are GeMini, a portable gamma-ray spectrometer; The Land Mine Locator, an aerial land mine detection system; Artificial Retina, a device to restore at least partial vision to optically impaired patients; FemtoScope, a fiber-optic-based, time microscope

that can be attached to the front end of any conventional recording instrument; and Spectral Sentry, a system to protect critical laser systems, such as LLNL's Mercury laser.

The Lab has never received so many awards in one annual R&D 100 competition. Including this year's results, the Laboratory has now captured a total of 129 R&D 100 awards since 1978.

At the conclusion of the ceremony, LLNL and its partners were additionally awarded a coveted "Editors' Award," signifying the uppermost achievement in developing new technology.

LLNL systems engineer Richard Montesanti operates the precision robotic assembly machine.



Laboratory receives 2009 waste reduction award



Livermore Laboratory has been named winner of a 2009 WRAP (Waste Reduction Award Program) award by the California Integrated Waste Management Board. This

is the second consecutive year that the Laboratory has received the award, which recognizes California businesses and organizations that have made outstanding efforts to reduce nonhazardous waste by implementing resource-efficient practices; aggressive waste reduction, reuse and recycling activities; and procurement of recycled-content products.

LLNL regularly diverts more than 60 percent of all routine Laboratory solid waste generated, keeping approximately 2,500 tons out of landfills each year. In addition, LLNL saves more than \$500,000 annually through sales of recyclables and reusable materials. The Laboratory also has a successful reuse program that accepts reusable materials site-wide and operates an onsite "Second Time Around" store where employees can obtain reusable items at no cost.

In the area of waste reduction, the Laboratory either reused or reduced waste in materials ranging from computers and televisions to cardboard boxes and

office supplies. Waste reduction activities included the use of electronic forms and PDF circulation/review methods. Additionally, many tons of materials were recycled, from lumber to batteries to copier and toner cartridges.

LLNL also has a formal program for Environmentally Preferable Purchasing, which includes preferential procurement of recycled content and biobased products ranging from office products to biofuels. The Laboratory also purchases other "green" products, such as cleaning products and energy efficient computers and appliances.

Annual environmental report shows no adverse impact

Environmental monitoring of operations at Livermore Laboratory in 2008 indicates that there was no adverse impact to public health or the environment. The findings are presented in the Laboratory's Site Annual Environmental Report 2008.

The report demonstrates LLNL's continuing commitment to providing responsible stewardship of the environmental resources in its care. The report also documents the integration of environmental stewardship into strategic planning and decision-making processes through the Laboratory's Environmental Management System.

Along with an assessment of the impact of LLNL operations on public health and the environment, the report also summarizes the Laboratory's regulatory compliance with environmental standards and requirements, describes various environmental protection and remediation programs, and records results of environmental monitoring for the main Laboratory site, as well as for Site 300, the Laboratory's experimental test facility near Tracy.

LLNL's environmental releases are highly regulated. Monitoring samples were taken from air, water, vegetation,

foodstuff, soil and wastewater onsite and in surrounding communities.

In addition, the report documents the substantial actions the Laboratory has taken to comply with federal, state and local environmental laws, including the



Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, and National Environmental Policy Act, among others.

The complete report may be viewed at <https://saer.llnl.gov/>. The report also is available in the environmental repositories of the Livermore and Tracy public libraries.

Environmental Management System achieves international certification



Livermore Laboratory has achieved ISO 14001 certification for its Environmental Management System, conforming to standards set by the International

Organization for Standardization (ISO).

The purpose of the internationally recognized standard is to foster sound environmental practices — such as pollution prevention and waste reduction — that minimize negative affects upon the environment from an organization's operations or work activities.

ISO 14001 certification was bestowed upon LLNL by NSF International Strategic Registrations, an independent, not-for-profit auditing organization that examined the Laboratory's environmental policy, how the Laboratory addresses environmental aspects in the planning and execution of work, communication of EMS and related requirements to employees and subcontractors, and the steps taken to establish targets and programs to reduce environmental impacts.

"ISO 14001 certification is a major achievement for the Laboratory," said

Steve Liedle, LLNL deputy director. "It demonstrates the Laboratory's strong commitment to environmental stewardship and the strong performance of its formal environmental protection program."

The ISO is widely recognized in the business world as the authority on quality management. Its standards help ensure for the ISO certification-holder's clients a universal level of quality for that particular area of certification. The standards are designed to ensure the most effective, safe and efficient methods and products possible.

Lab focus on school district's world 'class' vision

The San Ramon Valley Unified School District (SRVUSD) wants to create a world-class learning environment for its students.

To accomplish this, district administrators are exploring partnership opportunities with the Laboratory. The SRVUSD is using funding from the Lawrence Livermore National Security, LLC, (LLNS) Community Gift program to open a dialogue with the Laboratory to pursue a collaborative partnership.

To this end, the LLNL Science Education Program (SEP) recently hosted visitors from SRVUSD. Superintendent Steven Enoch and a group of district

administrators and science teachers toured the National Ignition Facility and the Center for Accelerator Mass Spectrometry.

Following the tours, the teachers heard a presentation about energy from Laboratory systems analyst A. J. Simon, while administrators met with a small group of Laboratory managers to discuss possible future collaboration between LLNL and SRVUSD.

Among the possible ideas discussed was a teleconferencing capability of live science presentations to schools. In addition, virtual tours of LLNL research facilities could be offered to students in the near future.



San Ramon Valley Unified School District Superintendent Steven Enoch discusses possible collaborations between the school district and the Lab to improve science education.

LABORATORY TOURS

Tours of Lawrence Livermore National Laboratory's main site offer visitors a view into some of the Lab's exciting cutting-edge research programs and facilities.

Tour stops include:

- The National Ignition Facility, the world's largest and most energetic laser.
- The National Atmospheric Release Advisory Center, used for national and international emergency response.
- The Center for Accelerator Mass Spectrometry, renowned for its carbon dating capabilities.

Main site tours start and conclude at the Laboratory's Discovery Center off Greenville Road in Livermore.

Tours are conducted for pre-registered groups on Tuesdays at 9 a.m. and last 2-1/2 hours. To make a reservation, contact Carrie Martin at (925) 424-4175 or email martin59@llnl.gov

Discover LLNL is a publication of the Public Affairs Office at Lawrence Livermore National Laboratory. For more information, please contact Linda Lucchetti, lucchetti1@llnl.gov, or call (925) 422-5815.

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