

# LAWRENCE LIVERMORE REPORT

A weekly collection of scientific and technological achievements from Lawrence Livermore National Laboratory: Oct. 19-26, 2009.

## Get the bugs out



October is National Cyber Security Awareness Month, an event conducted every October since 2001 as a national public awareness campaign to encourage everyone to protect their computers and the nation's critical cyber infrastructure.

The Department of Homeland Security, the National Cyber Security Alliance and the Multi-State Information Sharing and Analysis Center are the primary sponsors of the month-long event meant to shed a brighter light on what home users, schools, businesses and governments need to do in order to protect their computers, children and data.

To mark National Cyber Security Awareness Month, Mark Graff of the Lab's Computer Security Program CSP, provides tips on disk encryption, wireless protection and general awareness of how hackers get into computers.

To see more, go to

<http://www.youtube.com/LivermoreLab#p/u/0/e6Fu3fiVKM><http://www.youtube.com/LivermoreLab>.

## There's no place like HOME



**Clockwise from left: Director George Miller; donations for the OpenHeart Kitchen; the start of the run.**

The Laboratory's Helping Others More Effectively (HOME) Campaign kicked off last week with the Laboratory's annual "Run for HOME."

Inspired by this year's theme, "Be a Hero," an assortment of Supermen and other creative characters with a "superhero" flair gathered for the run and for the first time, the run activities took place near the newly landscaped area by the Central Cafe. Runners completed a 2,500-meter loop within the Lab's boundaries and walkers enjoyed a stroll around Lake Haussmann.

Winners of the run and the costume contest received checks to be donated to the charity of their choice.

The HOME Campaign is the Laboratory's annual charity drive.

For more photos, go to [https://newsline.llnl.gov/\\_rev02/articles/2009/oct/10.23.09-HOME.php](https://newsline.llnl.gov/_rev02/articles/2009/oct/10.23.09-HOME.php)

**Alder's work helps scientists simulate nature**



### **Berni Alder receives the National Medal of Science from President Barack Obama**

The Lab's Berni Alder developed a type of computer simulation – called 'molecular dynamics' – used for simulating the motions of atoms and molecules. For this and other scientific achievements, Alder received the National Medal of Science.

Alder recently participated in an audio broadcast with EarthSky to discuss his work.

"Before computers, people tried to do it (solve these problems) through analytical and mathematical methods and that's a very tough problem," he says during the interview. "The computer methods have shown that we can solve problems that we couldn't solve with analytical mathematics."

Alder has a unique outlook on science: "Anybody can work at it, no matter where they come from, anywhere in the world and there is an extremely nice community to work in. Nationality, race, religion ... nothing matters. Science is above all that."

To hear the full podcast, go to <http://www.earthsky.org/interviewpost/human-world/bernie-alders-early-work-let-scientists-simulate-nature>

### **Livermore works on Alaskan coal power project**



**The first flare at a UCG plant in South Africa.**

Lawrence Livermore is advising a business working on what would be the first of a new kind of coal power plants in the nation.

The lab is helping Cook Inlet Region Inc. build an underground coal gasification (UCG) plant on the shore of Cook Inlet, near Anchorage, Ala.

Livermore Lab has studied UCG technology since the 1970s, and the method has been successfully demonstrated in Australia and South Africa. The process involves using oxidants injected into an underground coal seam to convert the coal to a gas that can be burned to provide power. Coal can be converted below ground and doesn't have to be mined.

If this new, 100-megawatt plant is approved by regulators, it would be the first UCG project in the United States.

To read more, go to

<http://sanfrancisco.bizjournals.com/sanfrancisco/stories/2009/10/19/daily6.html>

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### Photo of the week



**Putting the byte into science:** From left, LLNL's Berni Alder, who recently won the National Medal of Science, celebrates with young scientists Heather Whitley and Jonathan Dubois and Lab Director George Miller, during a reception held in honor of Alder's achievement.

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