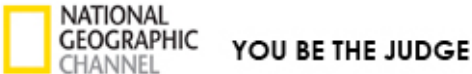


LIVERMORE LAB REPORT

A weekly review of scientific and technological achievements from Lawrence Livermore National Laboratory, Aug. 27-31, 2012



Did the Lusitania sink or explode? Viewers can decide for themselves tonight when they watch a National Geographic documentary about the sinking of the British passenger ship during the early part of World War I.

The Laboratory has a starring role in the show, which airs on the National Geographic channel (check local listings) tonight (Aug. 31) at 9 p.m. Pacific time, and will be repeated periodically.

On May 7, 1915, prior to the U.S. entry into the war, a single, well-placed German torpedo struck the RMS Lusitania passenger liner with 1,959 passengers on board, en route from New York to Southampton, England. The ship sank in less than 20 minutes and 1,198 people drowned.

The mystery, to this day not fully explained, arises because of accounts from survivors, as well as the commander of the German U-boat, of a second, more powerful blast about 15 seconds after the initial torpedo explosion.

The filmmakers took these questions to a team of experts at LLNL's High Explosives Applications Facility (HEAF). The answers came in the form of computer simulations and actual explosives testing performed in HEAF's 10-kilogram spherical tank, and filmed with extremely high frame-rate cameras. The production crew spent five days filming at LLNL.

View a video excerpt on the [Web](#).



A CLEANER COAL



The Shidongkou-1 power plant in China.

Coal is mighty, but it's also filthy. However, coal can become cleaner, according to the Lab's Julio Friedmann, leader of the carbon management program.

It sounds like a contradiction, but if it's true it has implications not only for the United States and China but for the world.

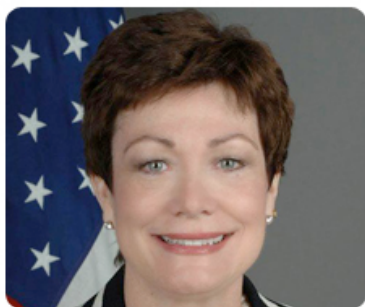
At the Clean Energy Research Institute in China, researchers already are making remarkable strides in capturing and storing the carbon dioxide output from coal plants. Friedmann said the United States can look to China for leadership in this area.

For the past 18 months, China has operated a pilot program at the Shidongkou coal plant that sequesters carbon dioxide and then sells it.

To see the full story, go to [PBS](#).



TAUSCHER JOINS LAB'S BOARD OF GOVERNORS



Ellen Tauscher

Former California Congresswoman and previous State Department missile defense special envoy Ellen Tauscher will join the boards of governors at both Lawrence Livermore and Los Alamos national laboratories.

Tauscher, who left Congress in the summer of 2009 to become under secretary of State for Arms Control and International Security Affairs, joins the boards after Sept. 17.

She will work on the boards of governors at Lawrence Livermore National Security, LLC and Los Alamos National Security LLC, the groups of businesses that run the Labs.

Tauscher represented California's 10th congressional district, which includes sections of the East Bay and Solano County north of Fairfield, as well as parts of Alameda County south of Livermore. The 10th district includes two national security laboratories -- Livermore and Sandia, which are across the street from each other.

To read more, go to the [*San Francisco Business Times*](#).



CAN MARINE LIFE PASS THE ACID TEST?



According to U.S. and Australian researchers, many marine species are in jeopardy -- they will be harmed or won't survive if increasing carbon dioxide levels persist in the world's oceans.

The oceans take up a significant amount of carbon dioxide released into the atmosphere. This makes the ocean more acidic, causing harmful conditions for many species of marine life, including corals and shellfish.

Scientists from the University of California, Santa Cruz, the Lawrence Livermore National Laboratory, the Nature Conservancy in Hawaii and the University of Queensland in Australia said current policies are unlikely to solve the problem. They argue current protection policies and management practices may not be enough to save species and are advocating broader marine management options.

Read more on the [Web](#).



BANKS CASHES IN ON EARLY RESEARCH AWARD



Lab scientist Jeffrey Banks is one of two alumni of Rensselaer Polytechnic Institution (RPI) to be honored recently with the national [Presidential Early Career Awards for Scientists and Engineers](#) (PECASE). The PECASE award is the highest honor bestowed by the U.S. government on science and engineering professionals in the early stages of their independent research careers.

Banks, who earned a doctorate in applied mathematics from Rensselaer in 2006, joins fellow RPI alumnus Christopher Mattson, who earned a doctorate in mechanical engineering from Rensselaer in 2003.

Banks was honored for his work in computational physics, science computation, and numerical analysis according to an announcement from the U.S. Department of Energy, Office of Science.

President Obama named 96 researchers as PECASE recipients this year.

Read more on the [Web](#).

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

To send input to the *Livermore Lab Report*, send [e-mail](#).