

## Tsunami exercise helps prepare research community for disaster response

By Joe Balintfy

What would happen if a magnitude 9.1 earthquake struck Alaska, generating a tsunami that hit the ports of Los Angeles and Long Beach, Calif., stirring up toxic substances from Superfund sites, oil refineries, and sewage treatment plants along miles of coastline? Scientists, community leaders, and state and local health organizations met in Los Angeles April 7 to discuss this not-so-far-fetched scenario, and to practice incorporating health researchers into immediate response and recovery efforts.

The exercise was a first step in the new [NIH Disaster Research Response Project](http://disaster.nlm.nih.gov/dimrc/dr2/disasterresearch.html), (<http://disaster.nlm.nih.gov/dimrc/dr2/disasterresearch.html>) a pilot project developed by NIEHS and the National Library of Medicine to create a disaster research system consisting of coordinated environmental health disaster research data collection tools and a network of trained research responders.

"We have a long history at NIEHS of engaging in research related to disasters, from the 9/11 World Trade Center attack, to Hurricanes Katrina, Ike, and Sandy, and the Gulf oil spill," said NIEHS and NTP Director Linda Birnbaum, Ph.D. "The sooner we can get into the disaster site and start collecting data, the more we can learn about the health effects that may result," she added.

NIEHS Senior Medical Advisor [Aubrey Miller, M.D.](#), emphasized that, in every disaster, saving lives is the first priority, but acknowledged there is a real need for scientific data, as well. "There are research questions that we need to be thinking and talking about that run parallel to what's going on in the lifesaving side of the house."

### Both an up-close perspective and bird's eye view

The tabletop exercise started with a bus tour that stopped first at a community sandwiched between a major freeway and an oil refinery, giving participants a sobering view of potential human exposures during a disaster. The tour continued to a park overlooking the ports of Los Angeles and Long Beach, which together form the largest container port complex in the U.S., and the fifth largest in the world.

One of the tour hosts, Andrea Hricko, of the Southern California Environmental Health Sciences Center at the University of Southern California, explained that harbor communities experience the combined impacts of production and storage of fossil fuels, together with traffic around the ports. According to Hricko, the ports are the single largest source of air pollution in Los Angeles.

"It's a huge port complex and international gateway, which means there are a lot of ships in the harbor, cranes, diesel-fueled trucks, thousands of containers, and fuel storage facilities," she said. "And, if there were a tsunami, you can picture the refineries catching fire and oil spills from fuel storage tanks and barges."

### A disaster that hasn't happened in 50 years

The exercise included certain assumptions - for example, half a million people are affected by blocked roads, power outages, and fires. Participants discussed when and how it would be appropriate and safe to start research. First responders, worker organizations, state and local health departments, and federal agencies collaborated to expand recovery plans to include trained research responders.



The ports of Los Angeles and Long Beach receive 40 percent of all imports to the U.S., mostly from Asia, and are close neighbors to surrounding communities. (Photo courtesy of Joe Balintfy)



Hughes, right, introduces Stephanie Ross, Ph.D., a geophysicist with USGS and coordinator for the [Science Application for Risk Reduction](http://www.usgs.gov/natural_hazards/safrr/) ([http://www.usgs.gov/natural\\_hazards/safrr/](http://www.usgs.gov/natural_hazards/safrr/)) Tsunami Scenario, the basis for the Disaster Research Response Tabletop Exercise. (Photo courtesy of Joe Balintfy)



Linda Delp, Ph.D., director of the University of California, Los Angeles, Labor Occupational Safety and Health Program, explained that the Los Angeles basin is home to nearly 13 million people, 60 percent of California's workforce, 20 active and former Superfund sites, and eight major refineries. (Photo courtesy of Ted Outwater)

Joseph (Chip) Hughes, director of the NIEHS Worker Education and Training Program, pointed out that the tsunami scenario used in the exercise was based on one developed by the U.S. Geological Survey (USGS). "One of the great things about this activity is that our agencies have been able to partner and develop our tabletop exercise from their scenario," said Hughes, with a reminder that an earthquake in Alaska caused a tsunami 50 years ago.

(Joe Balintfy is a public affairs specialist in the NIEHS Office of Communications and Public Liaison.)



*Hughes, front left, is one of more than 135 people, including researchers, health experts, and government leaders, who participated in the Disaster Research Response Tabletop Exercise. (Photo courtesy of Joe Balintfy)*

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