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New research puts focus on earthquake, tsunami hazard for southern California

Seismological Society of America convenes conference in San Diego, April 17-19

San Francisco, April 12, 2012 -- Scientists will convene in San Diego to present the latest seismological research at the annual conference of the [Seismological Society of America](#) (SSA), April 17-19.

This year's meeting is expected to draw a record number of registrants, with more than 630 scientists in attendance, and will feature 292 oral presentations and 239 poster presentations.

"For over 100 years the Annual Meeting of SSA has been the forum of excellence for presenting and discussing exciting new developments in seismology research and operations in the U.S. and globally," said Christa von Hillebrandt-Andrade, president of SSA, which is a scientific society devoted to the advancement of earthquake science. von Hillebrandt-Andrade is manager of the NOAA National Weather Service Caribbean Tsunami Warning Program in Puerto Rico.

A special public town hall meeting is scheduled for the evening of April 17, featuring talks by experts on the seismic hazard to San Diego from future earthquakes and tsunamis.

"We are extremely excited by the range, depth, and quality of science to be presented at this meeting" said David Oglesby, associate professor of earth sciences at the University of California, Riverside. "The meeting will cover all aspects of seismology and earthquake science, from geology to numerical models, and from seismograms to tsunamis. Our location near the US-Mexican border also help to illuminate the exciting opportunities in international scientific collaborations," said Oglesby, who is a co-organizer of the conference program along with Raul Castro, a seismologist at the Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California.

The presentations by the international gathering of seismologists will focus on a broad range of topics, covering the Earth's surface to its center. Some highlights that focus more closely on the San Diego area include:



Downtown San Diego:

The city of San Diego sits atop a fault system that poses considerable seismic hazard to the millions of the region's residents. In an evaluation by Ivan Wong and colleagues from the URS Corporation, an international engineering consulting firm, the potential hazard from both strong ground shaking and surface faulting was quantified in the downtown area. Several rupture scenarios of the Rose Canyon fault system were considered including rupture of the associated San Diego fault that traverses downtown San Diego. The surface faulting hazard for locations along the San Diego fault is estimated to be low because of its low rate of activity but the ground shaking hazard is probably high throughout much of San Diego because of the distributed nature of the Rose Canyon fault system.

The behavior of the Rose Canyon fault system as it traverses San Diego is poorly understood. It is unclear what the role of individual faults in the fault system are in the vicinity of San Diego Bay and the downtown area in a large magnitude 7+ earthquake and how often such events may occur. "It is clear however that the threat to the city from a future large earthquake is considerable and that research is needed to define what that level of hazard is," said Ivan Wong, principal seismologist and vice president of URS Corporation.

San Jacinto Fault Zone:

Geophysicist Tom Rockwell, and colleagues from San Diego State University will describe the latest research findings on the San Jacinto Fault (SJF) Zone, which is a seismically active, major component of the overall southern San Andreas Fault system, and of particular importance to the San Diego region. They have mapped evidence of past ruptures consistent with very large earthquakes along the Clark Fault, an individual strand associated with the SJF.

Tom Rockwell and other presenters will discuss their work at a news briefing on April 19, beginning at 12:10 p.m. (local time) in the Terrace Salon 2 room of the Town and Country Resort and Convention Hotel.

Offshore faults:

A new map of active faults off the coast of southern California could clarify some of the earthquake hazard for the region, say Jamie Conrad of the U.S. Geological Survey and colleagues. Although this area is crisscrossed by faults, the seismic hazard posed by their activity isn't well understood, partly because it's unclear how much the faults slip and how they interact.

The new map covers a series of faults in the near-shore portion of the region known as the Inner Continental Borderland, located between the coast and the San Clemente fault, about 35-40 miles offshore. The crumpled and uplifted seafloor from Santa Monica Bay



to the Mexican border includes several high-angled and north-south trending faults. Using high-resolution seismic reflection data from a number of sources, including multiple sources of sonar beamed from research ships and unmanned underwater vehicles, the researchers were able to revise the current map in some surprising ways. The data show linkages between faults that were not known previously, for example, and in some cases show a fault slip rate of 1-2 millimeters per year.

The SSA 2012 Annual Conference will take place at the **Town and Country Resort and Convention Center** in downtown San Diego.

Founded in 1906 in San Francisco, SSA now has members throughout the world representing a variety of technical interests: seismologists and other geophysicists, geologists, engineers, insurers, and policy-makers in preparedness and safety. The Society publishes the prestigious peer-reviewed journals *Bulletin of the Seismological Society of America* and *Seismological Research Letters*.

Editor's note:

SSA will host **four news briefings** during the meeting on these topics: San Jacinto Fault Zone, Advances in Rapid Earthquake and Detection, Central and Eastern U.S. Earthquakes and Long-term Faulting Behavior and Segmentation. Reporters may call into the briefings to listen to the remarks and ask questions. For details, write press@seismosoc.org or call 408-431-9885.

SSA will hold its public Town Hall meeting, "**Earthquake and Tsunami Hazards for the San Diego Region**," on the opening night of the Annual Meeting -- **Tuesday, April 17, 7:30 – 9:00 p.m.** in the **Town and Country Room at the Town and Country Resort**.

- Tom Rockwell, Professor, San Diego State University
- Kim Olsen, Professor, San Diego State University
- Pat Abbott, Emeritus Professor, San Diego State University
- Robert Hawk, City of San Diego
- Mark Legg, Legg Geophysical

The Town Hall meeting is free and open to the public.

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