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**CEA research forum focuses on modern data-collection methods after earthquakes
to help California improve building safety faster**

(SACRAMENTO) Experts from academic, government and private organizations met at the California Earthquake Authority's (CEA's) third annual research forum yesterday to discuss how best to collect information about earthquakes and the damage they cause, so that findings can be used to improve building safety faster.

The [forum](#), held in Sacramento, featured round-table discussions about how data was collected following the 1994 Northridge earthquake and how methods then differed, both in timing and sophistication, from how the engineering and scientific communities are evaluating the July 2019 Ridgecrest earthquakes today.

“The Ridgecrest earthquakes provided some clear examples of how much has changed since Northridge, from the expanded earthquake expertise we have now to the technology available,” said CEA Chief Mitigation Officer Janiele Maffei.

The discussions comparing the Northridge and Ridgecrest quakes included participants representing the University of California, Berkeley; the U.S. Geological Survey; the California Geological Survey; the nonprofit Earthquake Engineering Research Institute; engineering and scientific consulting firm Exponent; and multidisciplinary consulting firm Wiss, Janney, Elstner Associates, Inc.

Panelists described that after the Northridge earthquake, they did not have laptops and smart phones. Many observations were hand-written, paper maps were taped to walls, and in some cases it took years to process and then use the information gathered. Today, researchers have easy access to geographic information systems (GIS), apps, Wi-Fi, digital cameras, drones, lidar, global positioning system instruments and even automated aftershock forecasts—and can go into the field much better informed and know much more very quickly.

“The recent Ridgecrest earthquake sequence produced more than 40 miles of surface fault rupture,” said Cynthia L. Pridmore, an engineering geologist with the California Geological Survey and chair of the California Earthquake Clearinghouse. “The rapid and detailed acquisition of fault data using GIS-based field mapping devices resulted in an unprecedented amount of scientific information collected by scientists and engineers. All data collected from this event, including airborne imagery, will lead to a better understanding of the impact a similar earthquake might have in densely populated regions of the state.”

“Our technical capacities today allow us to gather and process data on the level of damage caused by an earthquake and its impact on people, buildings and infrastructure,” said Mary Comerio, Professor of the Graduate School, Department of Architecture, at UC Berkeley. “We can also model the effects of a range of earthquake impacts for different scenarios, in order to better plan for our response to future earthquakes. The modeling and mapping tools we now have allow us to improve our building codes and construction practices so that, over time, we can make our buildings, infrastructure and cities more resilient and shorten the recovery process.”

Panelists also described information they lacked in the past and described wish lists for types of data they would like to see gathered and made easily available to both researchers and the public. A CEA presentation in the afternoon covered CEA’s vision for learning from future earthquakes and its plans to seek outside expertise for technical evaluations, in order to better understand how residential structures perform in California.

“On the hazards side of earthquake science, the body of information improves with every earthquake, everywhere in the world,” Maffei said. “But in terms of understanding California homes, it really takes a California earthquake.”

The 2011 Christchurch, New Zealand, earthquake provided some relevant information for California, Maffei said, as did the 2018 Anchorage, Alaska, earthquake. Scientists also learned from some California earthquakes in recent decades, such as the 2003 San Simeon earthquake and the 2014 La Habra and American Canyon earthquakes.

“But a significant amount of our information still comes from the Northridge earthquake,” she said. “And we have an opportunity now, with the Ridgecrest earthquakes and future earthquakes, to update that.”

The afternoon session of the CEA research forum featured presentations from the Pacific Earthquake Engineering Research Center and California Geological Survey on studying and collecting data about ground motion for the Ridgecrest earthquakes, with round-table discussions among the approximately 50 attendees following the presentations.

More information about [CEA research efforts](#), including past research forums, is available on CEA’s website, [EarthquakeAuthority.com](#). Photos and comments from the 2019 research forum are also available, on CEA’s [Twitter](#) page and other social media accounts.

About CEA

The California Earthquake Authority (CEA) is a not-for-profit, privately funded, publicly managed organization that provides residential earthquake insurance and encourages Californians to reduce their risk of earthquake loss. Learn more at [EarthquakeAuthority.com](#).

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