EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

Founded in 1948, EERI's mission is to reduce earthquake risk by (1) advancing the science and practice of earthquake engineering, (2) improving understanding of the impact of earthquakes on the physical, social, economic, political, and cultural environment, and (3) advocating comprehensive and realistic measures for reducing the harmful effects of earthquakes.

NEWS OF THE INSTITUTE

▶ EERI Leadership Communiqué

A message from Heidi Tremayne (M.EERI, 2004), EERI Executive Director

*(published in the latest Pulse Digest)*

The new year is here and it will start off strong for EERI with the joint National Earthquake Conference and 72nd EERI Annual Meeting! For many months now, more than 30 member volunteers on various committees have been planning the conference.

This will be a special conference that blends many community ideas submitted through abstracts, as well as unique ideas generated from the collaborative program committees. The program will feature national developments, like functional recovery, Disaster Recovery Reform Act, new FEMA products developed by ATC, and NEHRP Seismic Provisions, alongside findings from recent earthquakes and relevant regional and local topics. We're also including practical case studies and new research developments, such as simulated ground motions, to appeal to members in all fields and sectors.

One of the most exciting developments for me is the San Diego earthquake scenario project developed by EERI's Regional Chapter, which will be released for the first time at the opening plenary. The group has been diligently working over the last several months to refine their final report and create a vision for a seismically resilient San Diego by 2050. I've had the opportunity to work alongside the regional chapter colleagues as we prepare the final products, and I'm inspired by their passion and enthusiasm for local action. In this work, it is also very interesting to see how unique San Diego is, yet also observe how many of the pathways towards seismic resilience can also be so universal. San Diego sits atop the recently identified Rose Canyon Fault Zone, which uniquely shapes the region's built environment and risk profile.
Like many communities, there are some mitigation success stories to highlight in San Diego, yet there are also many opportunities to address older vulnerable building stock and infrastructure systems to limit their impacts on community recovery after a future earthquake.

The findings from this multi-year project will be showcased across five different sessions that will provide plenty of opportunities for engagement by participants to help shape the next steps for San Diego. I sincerely hope those local to the region adopt our chapter’s vision for a seismically resilient San Diego and choose to actively participate in its implementation in the years to come. And I also hope that those who live outside the region can share their perspectives in these discussions, then apply some of these ideas to their own local region.

As you can tell, there will be incredible dialogue and opportunities for learning at the NEC, and I hope that you will register to attend. It’ll be a great way to kick off a new year and inspire the actions needed for us to collectively reduce earthquake risk. As always, I believe that by working together we can accomplish so much. See you in San Diego!

Renew your EERI membership before the grace period ends February 1

With the holiday rush over and the new year just starting, please don't forget to renew your EERI membership for 2020 if you haven't already! All EERI 2019 memberships expired on December 31 (except students, whose memberships expired August 31). EERI extends a grace period of one month. If you have not yet renewed your membership status for 2020, you will still receive member benefits, including access to Earthquake Spectra, through January 31. As of February 1, your 2019 membership will no longer be active and your member benefits will end.

Please renew your EERI membership now for 2020 to remain a part of our vibrant community, keep receiving the Pulse e-newsletter, retain access to the premier journal of earthquake engineering, Earthquake Spectra, and be eligible for EERI member discounts and events throughout the year. We've made it simple for you to renew — just click here!
EERI AWARDS

EERI 2019 Student Paper Awards

EERI is pleased to announce the winners of the EERI 2019 Student Paper Awards! The winners will be honored at the EERI award ceremony at the 2020 National Earthquake Conference and EERI Annual Meeting.

The Graduate Student Paper Award goes to Ganyu Teng of Stanford University for the paper, “Evaluation of SCEC CyberShake Ground Motions for Engineering Practice” with Jack Baker (M.EERI,2004). Ganyu is a third-year Ph.D. student in Civil Engineering and a part of the Stanford Center for Induced and Triggered Seismicity. Her research focuses on short-term probabilistic hazard assessment for regions of induced seismicity, specifically on hydraulic-fracturing-related earthquakes. Ganyu received her B.E. in Civil Engineering at Nanyang Technological University, Singapore. During her M.S. at Stanford, she worked on the evaluation of CyberShake ground motions for potential application to high-rise building design in the Los Angeles region.

The Undergraduate Student Paper Award goes to Omar Issa (M.EERI,2018) of UCLA for the paper, “Comparing the Seismic Collapse Performance of Cantilever Column and Moment Frame Retrofits for Wood Frame Structures Using Los Angeles Soft-Story Basic Ordinance Guidelines.” Omar is pursuing a bachelor’s degree in civil & environmental engineering, while also serving as the president of the EERI Student Chapter. As an undergraduate researcher in the Burton Research Group & the Garrick Institute for the Risk Sciences, he is passionate about improving the resilience of urban regions to natural disasters. Along with his research, Omar credits his reconnaissance work following the 2019 Ridgecrest Earthquake for motivating him to pursue further education in Structural/Earthquake Engineering.

NEC 2020 AND EERI ANNUAL MEETING

Sessions focus on regional perspectives, national reach, broad impact
Don't miss this exciting line-up of technical sessions designed to broaden your perspectives and impact at the 2020 National Earthquake Conference and the 72nd EERI Annual Meeting, March 4-6 in San Diego! The following sessions feature regional perspectives and strategies that are relevant to other communities across the nation. Please note that more speakers will be added. Register today to reserve your seat!

**Beyond California: Disaster Resilience Planning from Across the Nation**
This session explores unique approaches to building resilience in communities through all levels of government and volunteer efforts. To improve seismic resilience, we must draw on lessons from beyond our “own backyard.” Communities must prepare for and withstand a wide range of disasters by identifying and executing context-dependent strategies. Speakers will highlight distinctive processes that enable success, including multi-hazard risk evaluation, resource optimization, and stakeholder engagement. Speakers include:

- Mike Harryman, State Resilience Officer, State of Oregon
- Dan Burger, Chair, Charleston Resilience Network
- Sean McGowan, Earthquake Program Manager, FEMA Region VIII

**Leadership in the Wake of Disaster**
Inevitably following disaster, a community must come together, pick up the pieces, and find a path forward. Crucial in this process are the leaders who unite and guide residents toward economic, social, and physical recovery. Civic leaders from around the country present riveting accounts of their communities' response to the immediate impacts of disasters and the drawn out process of healing that follows. Speakers include:

- Jed McLaughlin, Chief of Police, City of Ridgecrest
From Expectation to Reality: Understanding and Leveraging Public Perceptions to Improve Earthquake Resilience
This session explores various ways practitioners, stakeholders, and decisionmakers can engage, incentivize, and motivate the public to adopt seismic safety measures. Topics include the new research-informed “No Code. No Confidence.” campaign to bring transparency to building codes; lessons learned from business and public demand for resilient buildings; the QuakeSmart program for community seismic resilience; and insights from the residential earthquake mitigation Earthquake Brace + Bolt Program. Speakers include:

- **Janiele Maffei**, Chief Mitigation Officer, California Earthquake Authority (M.EERI,1992)
- Leslie Chapman-Henderson, President and CEO, Federal Alliance for Safe Homes, Inc.

Strengths and Opportunities for Earthquake Clearinghouses
This panel discussion will explore opportunities and challenges for launching clearinghouses after future U.S. earthquakes. Post-earthquake clearinghouses play an important role in earthquake reconnaissance by facilitating and coordinating field investigation efforts and disseminating information through daily briefings and virtual clearinghouse websites. Conveners of two recent clearinghouses for the 2018 M7.1 Anchorage Earthquake and 2019 Ridgecrest Earthquake Sequence will share lessons learned. Speakers include:

- **Cynthia Pridmore**, Engineering Geologist, California Geological Survey (M.EERI,2000)
- **Maggie Ortiz-Millan**, Program Manager, Earthquake Engineering Research Institute (M.EERI,2012)

Don't miss out on these sessions and more — click here to register today!

Technical sessions cover new federal products and resources
Explore more important and informative sessions at the NEC2020. The following sessions will focus on the release of new federal products, resources, and initiatives. Register today to reserve your seat!

**FEMA Guidance on Post-Disaster Building Safety Evaluations: Current State-of-Practice and Recommendations Related to Structural and Nonstructural Safety and Habitability**

FEMA recently published *FEMA P-2055, Post-disaster Building Safety Evaluation Guidance: Report on the Current State of Practice including Recommendations Related to Structural and Nonstructural Safety and Habitability*. This guide summarizes and references best practice guideline documents, identifies recommended improvements and needs, and provides interim recommendations for issues without best practice guidance. This presentation will focus on recommendations related to earthquakes, including considerations for program planning prior to an incident and program management and implementation practices after an incident.

**Leveraging Newly Available Tools, Guidance and Applications for Seismic Risk Reduction and Recovery**

This session will focus on several applied research projects managed by the Applied Technology Council (ATC) that developed tools and guidance focused on seismic risk mitigation and recovery. These products include *FEMA P58-7: Building the Performance You Need*, *ATC-119-1: Application of FEMA P58 for City of San Francisco's Tall Building Safety Strategy*, *FEMA P-2018: Seismic Evaluation of Older Concrete Buildings for Collapse Potential*, *Guidelines for the Assessment and Repair of Earthquake Damage in Residential Wood-frame Buildings*, and *FEMA P-530: Earthquake Safety at Home: Prepare, Protect, Survive, Recover, Repair*.

**Development of NIST-FEMA Recommendations for Achieving Functional Recovery**

The discussion will define functional recovery, explain why it is needed, then focus on implementation options, including an assessment of each option's pros and cons developed with input from social scientists as well as architects, engineers, building owners, government officials, and building code officials. This session stems from the 2019 reauthorization of the National Earthquake Hazards Reduction
Program, which included a new requirement for NIST and FEMA to “convene a committee of experts from Federal agencies, nongovernmental organizations, private sector entities, disaster management professional associations, engineering professional associations, and professional construction and homebuilding industry associations, to assess and recommend options for improving the built environment and critical infrastructure to reflect performance goals stated in terms of post-earthquake re-occupancy and functional recovery time.”

**Making Cents of FEMA Mitigation Funding**

This session will discuss how earthquake program managers, emergency managers, and jurisdictions can identify and leverage federal funding sources for earthquake mitigation and planning activities. The session will cover new and existing federal funding sources, including the Disaster Recovery and Reform Act, Building Resilient Infrastructure and Communities, National Mitigation Investment Strategy, National Earthquake Hazards Reduction Program, National Earthquake Technical Assistance Program, FEMA mitigation grant programs, and more.

Don’t miss out on these sessions and more — click here to register today!

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**LEARNING FROM EARTHQUAKES**

- Palu reconnaissance trip studies population displacement and reconstruction
In November 2019, an EERI team—composed of Rob Olshansky (M.EERI, 1997), Kanako Iuchi (M.EERI, 2011), and Ghazala Naeem (M.EERI, 2014)—completed an LFE reconnaissance visit to Palu, Indonesia, 14 months following the devastating September 2018 earthquake and tsunami. Complementing a previous liquefaction reconnaissance trip by GEER and EERI's Preliminary Notes on Tsunami Information and Response, the November reconnaissance trip focused on issues related to ongoing population displacement and progress toward reconstruction.

Conducted jointly with the Institut Tecknologi Bandung (ITB) and supported by the Indonesian Ministry of National Development Planning (Bappenas), the group visited permanent relocation sites and temporary housing sites, as well as most of the significant liquefaction and tsunami-affected areas. They spoke to residents, non-governmental organizations, and representatives of all levels of government. In return, the team provided an opportunity in Bandung for ITB researchers and government officials to exchange ideas, and for officials from Bappenas and BNPB (Indonesian emergency management agency) to hear concerns about the ongoing process.

To support this collaboration, EERI and ITB have signed an MOU, and ITB's Research Center for Disaster Mitigation and Center of Excellence for Earthquake Sciences are both eager to work with EERI members on topics of mutual interest. Because of the active seismicity of Indonesia, ITB will help facilitate the process of obtaining research visas. To learn more about how you can take advantage of this great opportunity, please contact EERI Program Manager Maggie Ortiz-Millan at maggie@eeri.org.

The team will present their preliminary findings during a webinar in early 2020. A full report on the lessons learned from the reconnaissance trip will be available later in 2020. Reconnaissance photos from the team will be available on the virtual earthquake clearinghouse website soon.

Photo credit: Rob Olshansky
YOUNGER MEMBERS COMMITTEE

- YMC blog: Cushing, Oklahoma - What’s happened to the historic downtown in the years following the 07 November 2016 M5.0 Earthquake?

The Younger Members Committee is pleased to share its new blog! Be sure to check out the first post by YMC Co-Chair Ezra Jampole (M.EERI, 2012). Ezra is a Senior Engineer in the Buildings and Structures Practice at Exponent in New York City, where he investigates structural engineering failures. Ezra holds a Ph.D. and M.Sc. from Stanford University and a B.S. from Northeastern University.

"On 07 November 2016 (01:44:25 UTC) a M5.0 earthquake devastated the historic downtown of Cushing, Oklahoma. Within a week of the earthquake, EERI sent a reconnaissance team to Cushing to document the damage to the built environment and implement a business resilience survey in the historic downtown, shown in Figure 1. The team documented their observations and findings in a report, which addressed seismicity, geotechnical and ground motion effects, performance of buildings/lifelines, nonstructural components, emergency response, and social/economic impacts. Summarizing the observed building performance, unreinforced masonry (URM) buildings in the historic downtown (built circa 1900) sustained significant damage, including out-of-plumbness, partial collapses, and extensive façade damage." Read more

ANNOUNCEMENTS

- Howard Kunreuther to speak at Blume Distinguished Lecture Series

The next John A. Blume Distinguished Lecture Series at Stanford University features Howard Kunreuther, the James G. Dinan Professor Emeritus of Decision Sciences and Public Policy, and Co-Director of the Wharton Risk Management and Decision Processes Center at the Wharton School, University of Pennsylvania. Titled "Reducing Losses from Catastrophic Risks: The Role of a Behavioral Risk Audit,"
Kunreuther’s talk will examine factors that lead individuals NOT to protect themselves against low-probability high-impact events until it is too late.

- Tuesday, January 21, with a reception at 4 pm and lecture at 4:30 pm.
- Koret-Taube Conference Center, Gunn-SIEPR Building, 366 Galvez Street, Stanford University
- Free and open to the public, RSVP here

The Masonry Society elects first female president

Christine A. Subasic, consulting architectural engineer in Raleigh, North Carolina became President of The Masonry Society (TMS) following the Society's November 2019 meetings in Scottsdale, Arizona. Christine has been a member of TMS for over 25 years and has served in numerous leadership roles. With expertise in masonry and sustainable design, Christine provided technical support services, including standards development, educational seminars, and inspection services in the masonry industry for over 25 years. Read more

NEWS OF THE PROFESSION

- The lesson of an Albanian earthquake: The Balkans aren't ready for the big one (New York Times)
- The Newcastle earthquake, 30 years later: How engineers helped city back to its feet (Newcastle Herald)
- Ramboll uses bamboo to build earthquake-resistant housing in Indonesia (Dezeen)
- Seismic sensors in orbit (AGU Space and Science News)
- Indonesia, Thailand mark 15th anniversary of massive tsunami (Associated Press)
- When the Big One hits, emotional scars will last for years. Just ask New Zealand quake survivors (Los Angeles Times)
- More funding needed to maintain Alaska earthquake sensors (Associated Press)
- Thousands of Albanians homeless after earthquake (Al Jazeera)
Large earthquake strikes spot off coast of British Columbia (Associated Press)
Capacity and safety animate debate over post-earthquake plan for Chugiak-Eagle River schools (Alaska Public Media)
Strong earthquake strikes Colombia; buildings shake in Bogota (The Weather Channel)
California earthquake warning app sends 1st public alert (Associated Press)
Puget Sound is an earthquake hot zone, according to new seismic update (The News Tribune)
Map: Earthquake Shake Zones Around the U.S. (KQED)

Follow these steps to add EERI Calendar to your own Google calendar.

1. Open Google Calendar
2. On the left, above "My Calendars," click Add + and then From URL.
3. Enter the EERI calendar's address in the field provided. EERI Calendar ics link
   https://calendar.google.com/calendar/ical/eeri.org_s9151tit0ab26dnf2epn25d7rg%40group.calendar.google.com/public/basic.ics
4. Click Add Calendar. The calendar will appear on the left side under "Other calendars."

Monday, April 27, 2020 - April 30
SSA 2020 Annual Meeting
SSA 2020 Annual Meeting
27-30 April 2020 — Albuquerque, New Mexico
The 2020 Annual Meeting will be held in Albuquerque, New Mexico.
Check back later for more information.

Friday, May 15 2020 5:00 PM - May 16 2:00 AM
2020 Los Angeles Tall Buildings Conference
The 2020 Los Angeles Tall Buildings StructuralDesign Council conference will cover a variety of topics related to recent advances in structural design of tall and special buildings. Learn more: www.latallbuildings.org
17th WCEE
The 17th WCEE will be hosted in Sendai, Japan, from September 14th to 18th 2020. Check http://www.iaee.or.jp/ for more information.

ASCE/UCLA San Fernando Earthquake Conference
For more information: http://lifelines2021.ucla.edu/

Earthquake Engineering Research Institute
499 14th Street, Suite 220, Oakland, CA 94612-1934 USA
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