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 releases updated functional recovery paper with policy options

EERI is pleased to release an updated white paper titled, "Functional Recovery: A Conceptual Framework with Policy Options," leading the earthquake risk reduction field in a new way of thinking about resilience and formulating responsive policy solutions. Download the white paper here.

This version supersedes our white paper dated July 24, 2019, and includes two parts and a new executive summary. The first part contains the full language of the conceptual framework that was previously released, with a few slight revisions and updates.

The new second part explores how legislatures and government agencies at the federal, state, and local level can develop or implement policies for functional recovery. The policy options vary in scale and focus, however, the white paper considers ideas for buildings and infrastructure, both new and existing. EERI recognizes that the normal processes for developing design standards can and should be used and that there are also interim options available to policymakers.

In this updated paper, EERI explores a diverse suite of policy possibilities organized into the following four categories:

1. Legislation and regulations that require designing and planning for functional recovery, in addition to safety.
2. Interim programs that encourage designing and planning for functional recovery.
3. The development of technical consensus, specifically in the form of standards that set objective design criteria and planning strategies for achieving specified functional recovery times.
4. The development of policy consensus, specifically in the form of building code provisions and infrastructure regulations that assign, with local customization, acceptable functional recovery times to buildings and lifeline infrastructure systems based on their role in supporting various community functions.

The paper will inform a new NIST-FEMA working group mandated by recent national legislation and others considering new functional recovery standards and practices. You can expect to hear more about this at the EERI Annual Meeting and National Earthquake Conference in March 2020.

Renew you EERI membership before it expires on Dec. 31

With the holiday season in full swing and the new year just a few weeks away, please don’t forget to renew your EERI membership for 2020. If you have not renewed yet, your membership will expire in two weeks on December 31. Act soon before it’s too late. We’ve made it simple for you to renew — just click here! For the past several years, dues have remained the same, providing all the benefits and value you’ve come to rely on from EERI, like our biweekly Pulse e-newsletters delivered straight to your inbox. We hope you have found value in your EERI membership and will choose to remain a part of our passionate and dedicated community. Click here to renew EERI your membership today!

2018 Outstanding Paper Award from Earthquake Spectra
EERI is pleased to announce the winner of the 2018 Outstanding Paper Award from Earthquake Spectra, "Local Site Effects and Incremental Damage of Buildings During the 2016 Central Italy Earthquake Sequence" (Volume: 34 issue: 4, page(s): 1639-1669).

The paper is authored by Anastasios Sextos (M,EERI,1998), Raffaele De Risi (M,EERI,2019), Alessandro Pagliaroli, Sebastiano Foti, Federico Passeri, Ernesto Ausilio, Roberto Cairo, Maria Chiara Capatti, Filiberto Chiabrando, Anna Chiaradonna, Shideh Dashti (M,EERI,2009), Filomena De Silva, Francesca Dezi, Maria Giovanna Durante, Silvia Giallini, Giuseppe Lazio, Stefania Sica, Armando L. Simonelli, Paolo Zimmaro (M,EERI,2015).

Outstanding Paper Awards for Earthquake Spectra are awarded to authors of papers judged to be outstanding contributions to earthquake hazard mitigation. Papers of recipients must be judged to have made a significant impact on the profession, to provide a significant advance in the state-of-the-art or understanding of a particular topic, to be of exceptional technical quality with concise and informative illustrations and to be well written for a broad audience.

**Paper Abstract:** The Central Italy earthquake sequence initiated on 24 August 2016 with a moment magnitude M6.1 event, followed by two earthquakes (M5.9 and M6.5) on 26 and 30 October, caused significant damage and loss of life in the town of Amatrice and other nearby villages and hamlets. The significance of this sequence led to a major international reconnaissance effort to thoroughly examine the effects of this disaster. Specifically, this paper presents evidences of strong local site effects (i.e., amplification of seismic waves because of stratigraphic and topographic effects that leads to damage concentration in certain areas). It also examines the damage patterns observed along the entire sequence of events in association with the spatial distribution of ground motion intensity with emphasis on the clearly distinct performance of reinforced concrete and masonry structures under multiple excitations. The paper concludes with a critical assessment of past retrofit measures efficiency and a series of lessons learned as per the behavior of structures to a sequence of strong earthquake events.

Reginald DesRoches named provost of Rice University

Reginald DesRoches (M,EERI,1994), the dean of Rice University's George R. Brown School of Engineering, has been named the university's new provost. Among many accolades and awards over the course of his career, Reginald was the 2018 EERI Distinguished Lecturer.

Born in Port-au-Prince, Haiti, and raised in the New York City borough Queens, DesRoches credits his love of science and math and his interest in “tinkering with things” with leading him to pursue a degree in mechanical engineering, according to a press release from Rice University.
Reginald is also a nationally recognized expert on earthquake resilience who has testified before U.S. House and Senate subcommittees. He has also participated in Washington, D.C., roundtables for media and congressional staffers on topics ranging from disaster preparedness to challenges for African American men in the STEM fields — science, technology, engineering and mathematics. Read more

NEC 2020 AND EERI ANNUAL MEETING

Technical sessions at NEC2020 designed for you

Stuck in a rut of delivering project after project, deadline after deadline, and trying to look for ways to understand how your work fits into the bigger picture? At the 2020 National Earthquake Conference and EERI Annual Meeting to be held March 2-6, 2020 in San Diego, we've designed technical sessions specifically with you in mind. And don't forget to take advantage of the early-bird rate by December 31!

The technical sessions at NEC 2020 seek to advance your practice by showcasing the latest cutting-edge research alongside practical case studies. Coupled with dynamic plenary sessions, the NEC 2020 agenda will get you thinking beyond your specialty to explore collaborative opportunities in mitigating earthquake impacts.

Moderated by Christine Goulet, the Executive Director for Applied Science at the Southern California Earthquake Center, the session "Progress and Challenges in Utilizing Simulated Ground Motions for Engineering Practice" offers an opportunity to discuss a wide range of ground motion simulation models. The session will explore the models' current strengths and shortcomings through available validation methodologies, as well as the progress and challenges in utilizing simulated ground motions in the engineering practice. Presenters include:

1. Jonathan Stewart (M.EERI,1994), Professor, and Buka Nweke, Post-Doctoral Research Fellow, both of the University of California, Los Angeles, will present on the basin effects in simulated ground motions for Southern California.

2. Ting Lin (M.EERI,2009), Professor at Texas Tech University, will discuss guidelines on utilization of simulations for engineering building response applications.

3. Jack Baker (M.EERI,2004), Professor at Stanford University, will present on simulated CyberShake time series for engineering building code analyses.

4. Farzin Zareian (M.EERI,2005), Professor at the University of California, Irvine, will discuss the utilization of simulations for engineering bridge response applications.

5. Marty Hudson (M.EERI,1994), Andrew Dinsick, and Kenneth Hudson (M.EERI,2018) of the Turner Construction Company, Geopentech, and Wood respectively, will examine tall building ground motions in Southern California and will compare recent design ground
Exciting plenary at NEC2020 explores framing earthquake hazard conversation

Don't miss out on an exciting plenary session at the 2020 National Earthquake Conference and 72nd EERI Annual Meeting, “From Earthquakes Big to Small: How to Frame the Earthquake Hazard Conversation!” Register today to take advantage of the early-bird rate!

This dynamic and timely session features Dr. Julian J. Bommer, Senior Research Investigator at Imperial College London and the 2020 EERI/SSA Joyner Lecturer, and Dr. Lucy Jones, founder of the Dr. Lucy Jones Center for Science and Society, followed by a facilitated Q&A session.

Drs. Bommer and Jones will explore the science and impact of smaller earthquakes and how to frame conversations to stakeholders about considering and planning for earthquakes of various scales. More often than not, planning and mitigating for earthquakes focus on earthquakes with large magnitudes, extensive damage, and far-reaching societal impacts. Discussing only large-scale earthquakes, however, can limit how the public, policymakers, and critical decision-makers perceive risk and take preventative actions.

More specifically, Dr. Bommer will discuss how the occurrence of some low-magnitude earthquakes in recent years has caused unexpected levels of damage and particularly by the heightened concern regarding earthquakes of anthropogenic origin. By examining case studies, a global analysis of small-to-moderate magnitude earthquakes, and structural damage caused by the smallest magnitude earthquakes, the
Dr. Jones will then expand upon the scientific basis for consideration of small earthquakes by exploring what we can learn from risk perception science and how that should impact how we speak about both large and small earthquakes. Disasters can be on a personal scale, for those whose home or livelihood are lost, or on a societal scale when infrastructure damages result in cascading impacts that interrupt the economic prosperity of a community. They create different motivators for action at both the personal and societal levels.

For more information about the 2020 NEC, please visit EarthquakeConference.org.

Call for posters extended: 2019 Ridgecrest Earthquake Sequence

Submission deadline extended to Friday, December 20! We’re seeking poster abstracts on the 2019 Ridgecrest Earthquake Sequence. Submit your proposal here. Proposals are welcome on a variety of topics. Abstract submissions are limited to 250 words or less. The poster session will take place on March 5, 2020 from 6:00 - 7:30 pm. In addition to the poster session, the 2020 NEC will feature several sessions on lessons and impacts from the Ridgecrest Earthquake Sequence. For more information about the 2020 NEC, please visit EarthquakeConference.org.

LEARNING FROM EARTHQUAKES

EERI coordinates reconnaissance efforts for the M6.4 Durres, Albania Earthquake

EERI is actively responding to the November 26 M6.4 Durres, Albania Earthquake. The Learning From Earthquakes (LFE) Executive Committee met on December 1 to determine EERI's response. Based on information provided in the Virtual Earthquake Reconnaissance Team (VERT) report and by other members in the field, the LFE committee decided that EERI is best positioned to serve in a coordination role for this earthquake.

EERI has been in close contact with several colleagues who have conducted or will conduct reconnaissance. We coordinated a call on December 10 to provide an opportunity for teams to share observations and discuss plans. EERI will be developing a joint report on the earthquake with contributions from those in the field. EERI has established an earthquake page on the LFE website where several reports are posted.

Preliminary observations from the reports include:

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The most common building damage pattern observed was shear “X” cracking and out-of-plane failure of hollow clay tile nonstructural walls. This type of damage was especially common in taller (8 to 12 story) buildings, but it was also exhibited in shorter (2 to 7 story) buildings. This type of building has been built in Albania since 1990, and many of the buildings were built in the last few years. Code enforcement in design and construction was limited during the period in which many of these buildings were constructed. It is a common building type in Albania. (personal observations from Chiara McKenney, M.EERI, 2011)

Sand boils and liquefied material were observed near the sites of collapsed buildings in the coastal area of Durres. (Newsletter of Environmental, Disaster, and Crisis Management Strategies)

Several collapsed reinforced concrete buildings were observed. Most contained irregularities including soft stories, torsional irregularities, or discontinuous columns that may have contributed to collapse. (personal observations from Chiara McKenney, M.EERI, 2011)

More information about the earthquake impacts can be found in the reports available on the LFE website:


- The November 26, 2019 Mw 6.4 Durrës (Albania) earthquake. By Professor Efthymis Lekkas, PhD c. Spyridon Mavroulis, PhD c. Dimitri Papa, and Em. Professor Panayotis Carydis

- Reconnaissance Observations from Chiara Mckenney, P.E. Photo Album. Photo Map.

Any questions regarding EERI's response to this earthquake can be directed to: Maggie Ortiz-Millan, EERI Program Manager maggie@eeri.org.

Earlier this year, EERI launched a landmark campaign to raise $4 million for a Learning from Earthquakes Endowment Fund to help us ensure the existence, innovation, and impact of LFE for years to come. Learn more about how you can support EERI's great work in response to this and other important earthquakes.

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UCLA's Department of Civil and Environmental Engineering is seeking a tenure-track faculty position to support and grow the department's work in infrastructure risk mitigation and sustainable urban systems. Learn more

Save the date: San Fernando Earthquake Conference

Save the date for the UCLA/ASCE Lifelines Conference 2021, February 7-10, 2021, commemorating the 50th anniversary of the San Fernando Earthquake. The anniversary provides an opportunity to reflect on the need to increase the resilience of our critical infrastructure systems to earthquakes and other hazards. The conference provides a retrospective of where we are today, how we got here, and where we are going with respect to creating resilient infrastructure systems. Learn more

NEWS OF THE PROFESSION

Links to recent news and views

1. 3 dead, 7 missing in building downed by Philippine quake (Associated Press)
2. New earthquake model shows 'significantly increased ground shaking' in 2 Bay Area locations (SFGate)
3. Scientists scramble to collect data after Ridgecrest earthquakes (AGU Earth and Space Science News)
4. I went to New Zealand to understand what a huge California earthquake would look like (Los Angeles Times)
5. Two of the biggest US earthquake faults might be linked (Nature)
7. How to turn your smartphone into an earthquake detector (AGU Earth and Space Science News)
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."

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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 Structural Design 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

Monday, September 14, 2020 - September 18
**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.

Sunday, February 07, 2021 - February 10
**ASCE/UCLA San Fernando Earthquake Conference**
For more information: http://lifelines2021.ucla.edu/

Wednesday, March 17, 2021 - March 19
**EERI Annual Meeting**