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.

IN MEMORIAM

Ugo Morelli (1922-2016)

With sadness, we report the passing of EERI honorary member Ugo Morelli (M. EERI, 1996) on February 3, 2016. Morelli managed the FEMA program on seismic safety of new buildings from 1982 to 1991, and a similar program on existing buildings from 1984 until his retirement in 2003. Prior to those assignments, he worked in all-hazards mitigation with FEMA and predecessor agencies beginning in 1971, and in the private sector in management consulting, as one of the founders and as director of the Management Sciences Division of Logos, Ltd., and in strategic planning for the Martin Company (now the Lockheed Martin Corporation).

Morelli served with U.S. Army Intelligence in Paris during World War II, and after graduate school had a civilian career in Air Intelligence, where he was responsible for all of the industrial targets in the Sino-Soviet complex that would have been attacked in a nuclear exchange. He held bachelor's and master's degrees from Harvard College and Harvard University.

In 2013, Morelli was featured in EERI's oral history series, Connections, where he described to interviewer Robert Reitherman (M. EERI, 1979) his childhood in Italy, education at Harvard, and how a temporary job became a thirty-two-year career in emergency management. He had a great impact and perspective on the field of earthquake engineering, witnessing and playing a role in the birth of FEMA, NEHRP, and BSSC.

Colleague Diana Todd noted in her introduction to Morelli's oral history that he was "without a doubt one of the greats of the earthquake engineering field. Thanks to his work, the fruits of those other great minds made their way into the work of hundreds of thousands of engineers through this country and others. [...] Ugo's genius was his ability to bring together the people..."
who developed these bits of new knowledge, to have them work together, often donating their time, to create a distillation that could be used by any competent engineer to design a building that would better withstand earthquakes."

The Ugo Morelli Oral History, produced with financial support from the Federal Emergency Management Agency, is available on the EERI website as a free PDF and can be downloaded here: https://www.eeri.org/site/images/projects/oralhistory/morelli.pdf

LEARNING FROM EARTHQUAKES

Taiwan Earthquake Virtual Clearinghouse Launched

In response to the M6.4 earthquake in Southern Taiwan on Saturday, February 6, 2016 (local time), EERI's Learning From Earthquakes (LFE) program launched a virtual clearinghouse site for the event, with preliminary reports, field photos, and a variety of other resources: http://www.eqclearinghouse.org/2016-02-taiwan/

No EERI-led reconnaissance trip is being planned at this time, but EERI is collaborating with international and U.S. groups and individuals planning field reconnaissance investigations to facilitate sharing of pre-departure information and archiving of reconnaissance field data through the virtual clearinghouse. To support the earthquake engineering and earthquake risk reduction community, EERI is building on recent successful activities after the 2014 South Napa and 2015 Nepal earthquakes to offer the following to researchers and practitioners studying the 2016 Taiwan earthquake:

1. Use of the virtual clearinghouse website and online data archive map to serve as a permanent archive and repository for field data from the event. The archive will give full credit and attribution for each piece of data (i.e. photo, report, etc.) to the contributor, and overlay data from all sources in single location. These mapped data layers will be publicly shared and will allow others to overlay them on their own GIS maps. The virtual clearinghouse site will become the archive for report data, photo gallery, and other resources as well. (View an example of a similar data map and virtual clearinghouse created for the 2015 Nepal Earthquake.) For the Taiwan earthquake, we ask colleagues conducting field reconnaissance to share their data (especially geolocated photos) in this archive.

2. Hosted team coordination calls prior to field visits.

3. Pre-travel synthesis of information on various damaged buildings by EERI Young Members Committee volunteers in support of traveling field teams prior to their departure.
4. Connection of field team members to EERI colleagues in Taiwan, as requested or needed.

5. Assistance with the post-processing and upload of field data (especially photos) for colleagues who have visited the impacted region and have field data to share into the data repository/archive. EERI is soliciting volunteers to help field team members post information to the data map and archive. This volunteer-pairing process was successfully done to support members of EERI's Nepal field team.

Any EERI members and colleagues who plan to head to Taiwan for reconnaissance should check in with LFE Program Manager Heidi Tremayne (heidi@eeri.org) to share their plans and learn more about collaboration and support opportunities.

2016 ANNUAL MEETING

Deierlein and Stewart to Present at 68th Annual Meeting

The Earthquake Engineering Research Institute will hold its 68th Annual Meeting in San Francisco, California, April 5-8, 2016.

Registration and full program details are now available on the 2016 Annual Meeting website. With a theme of "Beyond the Epicenter: Expanding Our Risk Perspective," the meeting program will delve into unanticipated effects, blind spots, and new insights in earthquake engineering.

Gregory G. Deierlein (M. EERI, 1989), the John A. Blume Professor of Engineering at Stanford University and director of the Blume Earthquake Engineering Center, has been named the 2016 EERI Distinguished Lecturer, and will present at the 68th Annual Meeting on Wednesday, April 6.

The EERI Distinguished Lecture Award is given to members of the Institute to recognize and encourage communication of outstanding professional contributions of major importance for earthquake hazard mitigation.

From Performance-Based Engineering to Earthquake Resilience

Performance-based earthquake engineering has matured over the past twenty years from a conceptual framework into a formal methodology that can enable quantitative assessment of the seismic risks to buildings and infrastructure. Enabled by advanced nonlinear analysis, performance-based methods provide for more transparent design and decision making that takes advantage of the latest research in characterizing earthquake ground motion hazards, simulating structural behavior, and assessing earthquake damage and its consequences. Performance-based approaches are facilitating the design of innovative structures and influencing building code requirements and public policies for earthquake safety. Yet, many challenges remain to evaluate recovery from earthquake damage and implications on the socio-economic functions of society. This talk will examine the major developments in performance-based earthquake engineering and ways it can be applied to reduce earthquake risks and improve earthquake resilience.
Jonathan P. Stewart (M. EERI, 1994), Professor and Chair of the Civil and Environmental Engineering Department at University of California, Los Angeles, will deliver the 2016 William B. Joyner Lecture at the Annual Meeting on Friday, April 8.

The William B. Joyner Lecture is awarded by the Seismological Society of America (SSA) in cooperation with EERI to those who have provided outstanding earth science contributions to the theory and practice of earthquake engineering or outstanding earthquake engineering contributions to the direction and focus of earth science research—together with demonstrated skills of communication at the interface of earthquake science and earthquake engineering.

Site Response Uncertainty and its Implications for Seismic Risk Characterization

This presentation offers fresh perspectives on the familiar topic of site response and its effects on seismic risk characterization. Although site effects are widely accounted for in engineering practice, limited understanding of underlying physical processes and limited availability of suitable analysis tools too often results in mis-characterizations. Intended for a broad audience, the speaker will address four main considerations:

1. The physical processes responsible for site effects;
2. The manner by which these processes are (or are not) reflected in relatively generic site factors used in GMPEs and in building codes;
3. Effectiveness of site-specific geotechnical ground response analyses to estimate site effects;
4. Recommended procedures for evaluating site-specific site response and its implementation in risk characterization for critical facilities.

For full program, logistics, and registration details, visit the [2016 Annual Meeting website](http://nehrp.gov/committees).

**NEWS OF THE PROFESSION**

ACEHR Calls for Renewed Federal Commitment on Earthquake Hazards Reduction, Meets March 3-4

The next annual meeting of the Advisory Committee on Earthquake Hazards Reduction (ACEHR) will be held on March 3 and 4, 2016, in Gaithersburg, Maryland. ACEHR is a federal advisory committee established by the 2004 reauthorization of the National Earthquake Hazards Reduction Program (NEHRP). It is charged with conducting a biennial assessment of the effectiveness of NEHRP in performing its statutory activities; the management, coordination, implementation, and activities of NEHRP; any need to revise NEHRP; and trends and developments in the science and engineering of earthquake hazards reduction. Additional information on the March meeting as well as ACEHR’s 2015 assessment and prior meetings and reports can be found at [http://nehrp.gov/committees](http://nehrp.gov/committees).

Laurie Johnson (M. EERI, 1990), current chairperson of ACEHR, provides more information on ACEHR’s most recent assessment:
ACEHR's 2015 assessment emphasizes the urgency and critical need for Congress, national policymakers and federal agency leaders to renew the federal commitment to earthquake hazards risk reduction through NEHRP and ensure that earthquake hazard reduction remains a federal priority. Foremost, ACEHR believes Congressional reauthorization of the Earthquake Hazards Reduction Act—the 2004 authorization expired in 2009—is essential for the long-term viability of NEHRP, along with sufficient funding for NEHRP to maintain its foundational emphasis on earthquake hazards and seismic design for the built environment, as well as an expanded emphasis on critical infrastructure and lifeline systems, and the social and economic dimensions of community seismic resilience. Prior to, or as part of, reauthorization, ACEHR believes a fundamental assessment of the nation's earthquake risk reduction progress to date and the gaps in implementing earthquake risk reduction measures must be conducted in order to define the next steps and future funding levels necessary to improve national earthquake resilience.

ACEHR also calls upon the Director of the National Institute of Science and Technology (NIST) as Chair of the federal Interagency Coordinating Committee on Earthquake Hazards Reduction (ICC) to revitalize the ICC, which has not met in several years, as a mechanism for advancing NEHRP within the respective agencies. ACEHR also recommends that the ICC conduct a review of the status of core operational elements authorized and funded under NEHRP, with attention focused on elements that have been dropped or cut back, as well as those that have been expanded or added. This recommendation stems from concerns that statutorily-mandated elements, such as George E. Brown Network for Earthquake Engineering, have been discontinued and the NEHRP agencies' growing emphasis on multi-hazard resilience may be channeling both Program focus and funding away from the unique issues of earthquake hazards, which may also be adversely impacting core operational activities funded or developed under NEHRP.

In addition to these four critical observations and recommendations, ACEHR's 2015 report also contains 16 specific recommendations for the NEHRP Secretariat at NIST and the four NEHRP agencies (NIST, the Federal Emergency Management Agency, the National Science Foundation, and the U.S. Geological Survey) that it believes can enhance the overall effectiveness of NEHRP and address more agency-specific priorities previously identified in the 2004 NEHRP authorizing legislation, the 2008 NEHRP strategic plan, ACEHR's prior assessment reports, and the 2011 roadmap issued by the National Research Council, National Earthquake Resilience: Research, Implementation and Outreach.

ACEHR's members are appointed for three-year terms and the committee is comprised of stakeholders in NEHRP, with balanced representation from key technical areas, geographical areas across the U.S., practitioners and researchers, state and local governments, and the private sector.

WSSPC Announces 2016 National Awards Recipients

The Western States Seismic Policy Council (WSSPC) Board of Directors in partnership with the Northeast States Emergency Consortium (NESEC), the Central U.S. Earthquake Consortium (CUSEC), and the Cascadia Region Earthquake Workgroup (CREW) has announced the winners of the 2016 National Awards in Excellence, which will be presented at the 2016 National Earthquake Conference on May 5, 2016.

The National Awards are presented every four years and recognize organizations and agencies for their achievements as demonstrated through exemplary programs, projects, and products that address earthquake risk reduction within the United States.

Links to Recent News and Views

Ten recent stories, reports, or opinions from around the Web:

1. **In Pictures: The Taiwan Earthquake And Rescue Operations** (NPR) Views after the 6.4M earthquake on February 6. [http://www.npr.org](http://www.npr.org)


3. **NASA, Scripps Institution of Oceanography Shake-up Earthquake Warning Systems** (PDD) Underestimating the magnitude of an earthquake can mean that too small of an area receives hazard warnings. [http://www.pddnet.com](http://www.pddnet.com)

4. **Researchers find new cause of strong earthquakes** (Penn State News) A geologic event known as diking can cause earthquakes with a magnitude between 6 and 7, according to research team. [http://news.psu.edu](http://news.psu.edu)

5. **B.C.’s earthquake preparedness progressing slowly but surely: expert** (Vancouver Observer) Quietly earmarking millions of dollars for seismic upgrades and construction in anticipation of the “Big One.” [http://www.vancouverobserver.com](http://www.vancouverobserver.com)

6. **Assemblymember Dodd Protects Children with Classroom Earthquake Safety Bill** (East County Today) Addressing nonstructural hazards in California Schools [http://eastcountytoday.net](http://eastcountytoday.net)

7. **How Do You Explain Earthquakes to Refugees Without Freaking Them Out?** (Vice) Conveying crucial information to non-native, non-English-speaking communities. [http://www.vice.com](http://www.vice.com)

8. **Canterbury Earthquake Recovery Authority defends $2.5 million PR spend** (The Press) Acting chief executive says communications is a core part of what the organization does. [http://www.stuff.co.nz](http://www.stuff.co.nz)

9. **Shoddy construction suspected in Taiwan earthquake collapse** (LA Times) Tainan District Prosecutor’s Office arrest three former executives of the company that built Wei Guan Golden Dragon apartment complex. [http://www.latimes.com](http://www.latimes.com)

10. **Hundreds of California homes, buildings used plans drafted by 2 phony engineers, say authorities** (Fox News) "There has never been a case involving alleged engineering fraud of this magnitude." [http://www.foxnews.com](http://www.foxnews.com)
Earthquake Retrofit Fair in San Francisco April 18

As part of its Earthquake Safety Implementation Program (ESIP), the City of San Francisco will host an earthquake retrofit fair at the Bill Graham Civic Auditorium, 99 Grove Street, on April 18, 2016. Tables are available for all contractors, design professionals, manufacturers, and lenders interested in connecting with hundreds of property owners looking to start work on retrofitting their properties.

Interested participants should provide company name, service offered, and contact information. To reserve a table at no additional cost, please contact Jeno Wilkinson by email at jeno.wilkinson@sfgov.org by March 1, 2016.

Call for Papers: Jogja Earthquake in Reflection

An international seminar commemorating the tenth anniversary of the Jogja Earthquake will be held in Yogyakarta, Indonesia, May 24-26, 2016. Papers are being accepted in the following seminar themes: earthquake geology, post-disaster recovery, coastal hazard and tsunami, landslides, community-based disaster risk reduction and seismic hazard and earthquake engineering. Abstracts should be submitted to jer2016.upnyk@gmail.com by March 1, 2016.

More information at http://jer.upnyk.ac.id/

Call for Nominations: Shamsher Prakash Award for Lifetime Contributions in Geotechnical Earthquake Engineering

Shamsher Prakash (M. EERI, 1979), Honorary Fellow and former President of the Indian Society of Earthquake Technology (ISET) and Professor Emeritus, Department of Civil Engineering, Missouri University of Science and Technology has instituted an award to honor individuals for outstanding contributions in Geotechnical Earthquake Engineering.

Nominations for the Forum on Soil Dynamics Shamsher Prakash Award for Lifetime Contributions in Geotechnical Earthquake Engineering are invited on or before March 31, 2016. Nominees may be engineers, scientists, and researchers from anywhere in the world of any nationality and need not be a member/fellow of ISET. The award consists of an award of Indian Rs. 51,000/-, plus a shawl and a plaque.

Nominations should be sent to prakash@mst.edu with a PDF file not exceeding 5MB, including the detailed curriculum vitae of the nominee with the following information:

1. Name of the Candidate
2. Complete Postal Address and telephone, Fax number, email address
3. Date of Birth
4. Chronology of education
5. Chronology of jobs held
6. Complete list of refereed publication in Journals
7. A statement of 500 words on the significant contributions made by nominee
8. Any other relevant information

Self-nomination will not be accepted. The award/s will be presented during the opening ceremony of the 6th International Conference on Recent Advances in Geotechnical Earthquake Engineering & Soil Dynamics (http://www.6icragee.com), August 3-5, 2016.

For any further information, contact: Dr. Prakash at prakash@mst.edu

Presentations from PEER Annual Meeting Online

Presentation slides from the 2016 Pacific Earthquake Engineering Research Center (PEER) Annual Meeting, "Decision-Making in the Face of Uncertainty," on January 28-29, are now available online at http://peer.berkeley.edu/events/annual_meeting/2016AM/program/

The meeting program included presentations by Laurie Johnson (M. EERI, 1990) on community resilience planning, Scott Brandenberg (M. EERI, 2001) on kinematic soil-pile interaction, and Ian Robertson (M. EERI, 2010) on development of tsunami design provisions for ASCE 7-16.

More information on the meeting on the PEER Annual Meeting website

NYNE Co-hosts Event: Professional Women in the World of Construction

The New York-Northeast Chapter of EERI and the Deep Foundations Institute’s (DFI) Women in Deep Foundations Technical Committee are co-hosting a Reception and Panel Discussion on Professional Women in the World of Construction on the evening of Thursday, March 10,
2016, in the magnificent Library of General Society of Mechanics and Tradesmen (generalsociety.org) at 20W 44th St in New York City from 5:30 to 7:30 pm.

Confirmed panelists are Liesl Folks, Dean of Engineering of the University at Buffalo; Ramon Gilsanz (M. EERI, 2011) founding partner of EERI subscribing member Gilsanz Murray Steficek, Chair of the 2014 NYC Building Code Technical Committee, and Director of the EERI-NYNE chapter; Mary-Jane Augustine, Partner of Construction Law at McCarter-English, LLP; and Aspa Zerva (M. EERI, 1992), Professor at Drexel University, lead member of the NSF program ENHANCE for career of women in earthquake engineering, and Director of EERI-NYNE chapter.

The event will be moderated by Sissy Nikolaou (M. EERI, 2004) of MRCE (EERI subscribing member), Director of EERI and President of the NYNE chapter, and Helen Robinson of Schnabel Engineering, Chair of the DFI Women in Deep Foundations Technical Committee.

There is no cost to attend the event, but reservations are required – please RSVP to nyne@eeri.org

**PUBLICATIONS**

- **New ASCE Book Investigates Structure Performance During 2010 Chile Earthquake**

A new publication from the American Society of Civil Engineers (ASCE), *Chile Earthquake of 2010: Assessment of Industrial Facilities around Concepción*, examines how heavy industrial facilities might perform during a large seismic event.

On February 27, 2010, an earthquake off the coast of Chile registered a magnitude of 8.8, making it the largest in Chile since 1960. Between those two massive quakes, Chile enacted codes to improve the seismic resilience of structures. Because the Chilean codes are similar to codes in the United States, the performance of industrial facilities in Chile provided an unprecedented opportunity to study how heavy U.S. industrial facilities might perform during a large seismic event.

In April 2010, the ASCE/SEI Chile Assessment Team undertook a mission to observe structures in the affected zone and to gather information that would be useful to the development of U.S. codes. One team concentrated on identifying strengths and weaknesses in the response of industrial structures. Structures studied include a steel plant, a bio refinery, a petroleum gas terminal, a power station, and a base-isolated pier. This publication, authored by J.G. (Greg) Soules (M. EERI, 2005), Robert E. Bachman (M. EERI, 1982), and John F. Silva (M. EERI, 1991) provides structural engineers critical information for the development and implementation of seismic codes and standards, as well as for retrofit efforts in heavy industrial facilities.
Earthquake Spectra: Preprint Manuscripts

Seven preprint manuscripts have been posted to the Earthquake Spectra website prior to formal publication. The papers to be published are:

- "The 2014 earthquake in Iquique, Chile: Comparison between Local Soil Conditions and Observed Damage in the cities of Iquique and Alto Hospico" by Alix Becerra, Esteban Sáez (M. EERI, 2016), Luis Podestá, and Felipe Leyton.
- "Empirical correlation between inelastic and elastic spectral displacement demands" by Peter J. Stafford (M. EERI, 2008), Timothy J. Sullivan, and Domenico Pennucci.
- "Vector and Scalar IMs in Structural Response Estimation: Part I - Hazard Analysis" by Mohsen Kohrangi (M. EERI, 2016), Paolo Bazzurro, and Dimitrios Vamvatsikos (M. EERI, 2002)
- "Vector and Scalar IMs in Structural Response Estimation: Part II - Building Demand Assessment" by Mohsen Kohrangi, Paolo Bazzurro, and Dimitrios Vamvatsikos (M. EERI, 2002)
- "PRESHAKE: A Database for Centrifuge Modeling of the Effect of Seismic Preshaking History on the Liquefaction Resistance of Sands" by Waleed El-Sekelly (M. EERI, 2015), Tarek Abdoun (M. EERI, 2005), and Ricardo Dobry (M. EERI, 1974).

To read all current preprint manuscripts posted, visit Earthquake Spectra preprints.

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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 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