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 Response to M7.5 Afghanistan-Pakistan Earthquake on October 26, 2015

On Monday, October 26, 2015, a M7.5 earthquake struck northeastern Afghanistan near the border of Pakistan in the Hindu Kush mountain range. The EERI community extends its sympathy to the victims as rescue and relief work continues. As part of its Learning from Earthquakes (LFE) Program, EERI is currently monitoring the situation from media reports, and reaching out to members, colleagues, and organizations that have conducted reconnaissance and research in the impacted region. So far, EERI has heard from several members in Pakistan who may be able to share information with the EERI membership in the coming weeks.

Current information on the earthquake has been posted to an LFE archive web page with links to the event page on the U.S. Geological Survey website, World Housing Encyclopedia reports, media reports, information from the 2005 Kashmir Earthquake, and more: https://www.eeri.org/2015/10/afghanistan-earthquake/
Thomas O'Rourke to be Awarded Housner Medal

Thomas D. O'Rourke (M. EERI, 1980), the Thomas R. Briggs Professor in the Department of Civil and Environmental Engineering at Cornell University, will be presented with the George W. Housner Medal at the 2016 EERI Annual Meeting. The Housner Medal is awarded to recognize Institute members and others who have made extraordinary and lasting contributions to public earthquake safety through the development and application of earthquake hazard reduction practices and policies.

O'Rourke's research has had a critical impact on lifeline earthquake engineering across the globe and has improved understanding of the response of geographically distributed systems, such as water supply and electric power networks, to earthquakes and other natural hazards. Involved in earthquake engineering for over 30 years, O'Rourke's work has been recognized through numerous awards, including the American Society of Civil Engineers (ASCE) Charles Martin Duke Lifeline Earthquake Engineering Award, the Stephen D. Bechtel Pipeline Engineering Award, the Japan Gas Association Best Paper Award, and the LeVal Lund Award for Practicing Lifeline Risk Reduction.

Dr. O'Rourke has had numerous service positions that have allowed him to greatly impact the field of earthquake risk reduction. In 1998, he was elected to the Earthquake Engineering Research Institute (EERI) Board of Directors and served as President from 2003–2004. He testified before the United States House of Representatives Science Committee in 1999 on engineering implications of the 1999 Turkey and Taiwan earthquakes, and in both 2003 and 2009 on the reauthorization of the National Earthquake Hazards Reduction Program (NEHRP). He is currently using his expertise to help with the recovery planning for Christchurch, New Zealand, an area significantly impacted by the effects of the Canterbury Earthquake Sequence on its underground pipeline network.

Over his career, he has authored or co-authored over 360 publications on geotechnical, underground, earthquake engineering, and the impact of extreme events on civil infrastructure. His most notable awards, among many, are his election to the US National Academy of Engineering in 1993, his election as an International Fellow of the British Royal Academy of Engineering in 2014, his selection as the 2008 Rankine Lecturer, and his selection as the 2016 Karl Terzaghi Lecturer. He is a Distinguished Member of ASCE and an Honorary Member of EERI.

EERI Has One Post-Graduation Internship Position Open

The Earthquake Engineering Research Institute (EERI) has one internship position available for recent college graduates interested in gaining valuable professional experience while supporting the Institute's mission to reduce the risks from earthquakes. This position can begin as early as January 2016. Applications should be submitted by November 15, 2015.
The approximately six-month internship offers engagement in a number of interesting EERI projects and the intern would focus primarily on the EERI's Learning from Earthquakes, Concrete Coalition, World Housing Encyclopedia, and Confined Masonry Network projects.

Tasks are varied, although day-to-day work focuses on supporting EERI projects and staff through research, project coordination, and website development and maintenance.

Intern candidates should have:

- A bachelor's or master's degree in engineering, science, architecture or public policy.
- Familiarity with issues in earthquake risk reduction
- Proficiency in Excel and Word
- Basic HTML skills and some knowledge of website development and maintenance (WordPress and Joomla), or willingness to learn
- Skills with graphic design programs such as Adobe InDesign or Illustrator
- Curiosity, strong interpersonal skills, a flexible attitude towards work
- Ability to take initiative and independently solve problems
- Basic GIS skills and some knowledge of GIS software (ArcMap, ArcGIS Online), or willingness to learn

The intern will need to work in the EERI office, which means living in the Bay Area. (No moving or housing support provided). EERI interns are provided a monthly stipend of $2,200.

EERI Post Graduation internships are a great way to gain valuable professional experience, to be involved in meaningful projects related to seismic safety and risk reduction, and to make connections with EERI's multi-disciplinary professional community. The EERI office is conveniently located in downtown Oakland, close to BART and the freeway.

Interested applicants should upload their resume, a one-page cover letter highlighting their qualifications and interest in the EERI internship program, and two references to the secure website here: https://www.eeri.org/cohost/registration/internship-application. Preference is given to EERI members. Applications should be submitted by November 15, 2015. EERI would like a commitment of six months. New internship positions become available every four to six months.

EERI Post-Graduation Interns: Fall 2015

Two new post-graduation interns are now part of the EERI team. The Institute would like to introduce Cherry Chan, who joins intern Karen Izumoto (M. EERI, 2015) at the EERI office in Oakland, California.

Cherry Chan (M. EERI, 2015) graduated with a certificate in Geographic Information Systems from Fleming College in 2015 and a B.A. in Human Geography from the University of Toronto in 2013. She became fascinated with disaster risk management after learning about Tohoku earthquake mapping efforts and has been involved with disaster mapping completed by the Humanitarian OpenStreetMap Team. As
an advocate for open data, Cherry is excited to work on EERI's online data map interface which will make geospatial data more accessible to users.

The EERI post-graduate interns work on projects of the Institute including the School Earthquake Safety Initiative, the Concrete Coalition, the World Housing Encyclopedia, and Learning from Earthquakes. These projects offer the interns professional experience, exposure to the multidisciplinary aspects of earthquake engineering, and the opportunity to network with others in the profession. Their work benefits EERI's mission: to gather and disseminate information about earthquake risk reduction and to advocate for realistic measures to reduce the harmful effects of earthquakes.

EERI Endowment Donors

EERI would like to thank donors to the Endowment Fund and acknowledge their recent contributions. EERI's Endowment supports innovative projects that assure the Institute’s continuing leadership in the earthquake engineering profession.

The list below reflects donations that the Institute received from mid September to mid October 2015.

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Thank you for your support!

LEARNING FROM EARTHQUAKES

New information available about the M8.3 Illapel, Chile earthquake and tsunami

Since the M8.3 earthquake and tsunami on September 16, 2015, near Illapel and Coquimbo, Chile, various EERI members and colleagues have been uploading information to EERI's Virtual Earthquake Clearinghouse website. A few recent posts are mentioned below to alert the
1. A Preliminary Reconnaissance Observation Report has been created for EERI by the National Research Center for Integrated Natural Disasters Management, CIGIDEN, and the Department of Structural and Geotechnical Engineering of the Pontificia Universidad Catolica de Chile. Two teams traveled to the Coquimbo region to assess damage to infrastructure. The first reconnaissance team, focused on public hospitals and reinforced concrete buildings, included the following team members: Felipe Rivera, Rosita Jünemann, Gabriel Candia, Alan Poulos, Philomène Favier, Claudio Fernández, Matías Chacón, Gabriel Sanhueza, David Ugalde, José Ignacio Colombo, and Paula Aguirre. The second team, focused on road infrastructure, included the following team members: Matías Hube (M. EERI, 2005), Alondra Chamorro, Orlando Arroyo, Tamara Cabrera, Antonio Martínez (M. EERI, 2015), Juan Carlos Obando, Lilibeth Ramos, Sebastián Calderón, Mauricio Ferj, Felipe Baratta, and Joaquín Dagá. Download the report (PDF, 2 MB)

2. Juan Obando, David Ugalde, and Diego López-García from Pontificia Universidad Catolica de Chile prepared a comprehensive curated post describing the impacts of the earthquake and tsunami on housing. The post briefly describes the performance of one-to-two story masonry structures, reinforced concrete structures (with a case study of the Puerto Bahía condominium in Coquimbo), adobe structures, and wood structures complete with representative images in the summary pdf version (PDF 3 MB)

3. A ground motion assessment summary post was prepared by curators Ericson Encina at University of Auckland and Ana Gabriela Haro (M. EERI, 2014) at North Carolina State University in Raleigh. This post summarizes the available ground motion information and includes maps of past earthquakes in the region, shake maps, fault cross-sections, and spectra plots.

4. Curators Ericson Encina at University of Auckland and Ana Gabriela Haro (M. EERI, 2014) at North Carolina State University in Raleigh also prepared a post qualitatively describing public perceptions of earthquake shaking from the perspective of various individuals who felt the earthquake.

5. Strong Motion Records Analysis by Ruben Boroschek, University of Chile. This short report shows acceleration and integrated velocity and displacement series for a few key strong motion stations as well as Acceleration Response Spectra.

NEWS OF THE PROFESSION

Leon Named Distinguished Member of ASCE

Roberto T. Leon (M. EERI, 1984) was recently named a Distinguished Member of the American Society of Civil Engineers (ASCE). Only 661 of ASCE's worldwide members have been elected to receive the honor—the society's highest accolade—since the society's founding in 1852.
Leon has served on EERI's Board of Directors, and currently is the David H. Burrows Professor of Construction Engineering in the Charles E. Via Jr. Department of Civil and Environmental Engineering at Virginia Tech University.

Leon was recognized for his contributions to structural engineering research, education and professional activities, focusing on composite construction and earthquake engineering. He was also honored for his leadership as former president of the Structural Engineering Institute and the Consortium of Universities for Research on Earthquake Engineering. He received the award at the ASCE Annual Convention in New York, N.Y., Oct. 11-14, 2015. Read more on the ASCE website.

Links to Recent News and Views

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

1. **Pakistan quake: new building codes largely unenforced** (IRIN News) Unenforced seismic provisions in national building code compounds the destruction from October 25, 2015, 7.5-magnitude quake. [http://www.irinnews.org/](http://www.irinnews.org/)

2. **Christchurch earthquake lessons completed** (Scoop Independent News) New Zealand is now better at planning for and supporting the public in emergencies. [http://www.scoop.co.nz/](http://www.scoop.co.nz/)

3. **Canterbury Earthquake Recovery Authority misses key recovery targets** (The Press) Cera excels when it comes to meeting softer targets but has failed to meet key recovery milestones, according to its annual scorecard. [http://www.stuff.co.nz/](http://www.stuff.co.nz/)

4. **Photographer’s images of Nepal earthquake highlights work of relief charity** (Western Morning News) Photojournalist raises public awareness of the scale of the humanitarian crisis and the work of ShelterBox. [http://www.westernmorningnews.co.uk](http://www.westernmorningnews.co.uk)

5. **Insurance Commission requires insurers to clarify Oklahoma earthquake coverage** (Examiner-Enterprise from The Oklahoman) Insurance Commissioner orders insurers to send each state policyholder a clarifying notice of coverage. [http://examiner-enterprise.com/](http://examiner-enterprise.com/)


7. **Big earthquake chances high for Los Angeles County fault, JPL scientist’s study says** (San Gabriel Valley Tribune) Jet Propulsion Laboratory scientist says “probability is 99.9 percent” earthquake measuring 5.0 or greater will occur within the next two and a half years in LA County. [http://www.sgvtribune.com/](http://www.sgvtribune.com/)

8. **Why a 99.9% earthquake prediction is 100% controversial** (Los Angeles Times) USGS scouts 99% prediction by Jet Propulsion Laboratory. How certain can scientists be of when the next big earthquake will come? [http://www.latimes.com/](http://www.latimes.com/)

'Seems they like to chew on the plastic.' (KTUU) Seismic station taken out by wildlife in Alaska. http://www.ktuu.com/

ANNECoRE Releases First Collaboration Plan

QuakeCoRE is New Zealand’s newest Centre of Research Excellence with a mission of placing the country at the worldwide forefront of earthquake disaster resilience. This will be accomplished by utilizing New Zealand as a natural earthquake laboratory, producing new knowledge on the seismic response of the built environment, developing models to understand vulnerabilities within this environment, and designing innovative technologies and decision-support tools enabling rapid recovery of New Zealand communities.

The 2016 Collaboration Plan, released on http://quakecore.nz/ last week, will serve as the primary funding mechanism for QuakeCoRE, laying out mechanisms for domestic and international collaboration and inviting proposals related to all QuakeCoRE activities including research under flagship projects, technology platform development, and education or outreach initiatives. International collaborators are encouraged to partner with New Zealand project investigators in submitting a proposal to link QuakeCoRE with international research activities.

The QuakeCoRE Collaboration Plan also helps support international participation in the QuakeCoRE Annual Meeting, planned for late August 2016, where the QuakeCoRE community will come together to share ideas and plan collaborations for the following year. Requests for travel funding from international researchers must be cost-shared by international institutions.

As QuakeCoRE officially gets underway January 1, 2016, several opportunities exist to actively participate in QuakeCoRE’s mission; including post-doctoral fellowships and PhD scholarships as described at http://quakecore.nz/scholarships/ The next round of PhD scholarships will close on March 21, 2016.

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On October 17, 2015, the EERI Student Chapter at Purdue University hosted an all-day workshop on modeling and seismic analysis using the integrated structural analysis and design software, SAP2000. Forty-seven undergraduates, graduate students, and professionals attended the event in a classroom at Neil Armstrong Hall of Engineering on Purdue University's West Lafayette, Indiana campus.

Rob Tovani, Director of Verification, Validation, and Training at Computers & Structures Inc. (EERI Diamond Subscribing Member), led the workshop and instructed participants on using general modeling features in the morning session: defining materials, defining sections, defining model geometry (including area objects), and defining loads and boundary conditions. The afternoon session focused on seismic analysis in SAP2000, including equivalent lateral force procedures, modal analysis, response spectrum analysis, and time history analysis. The workshop concluded with discussion on performance-based design.

Earthquake Spectra: Preprint Manuscripts

Eight preprint manuscripts have been posted to the Earthquake Spectra website prior to formal publication. The papers to be published are:
- "Development of Generalized Fragility Functions for Seismic Induced Content Disruption" by **Jean C. Guzman Pujols** (M. EERI, 2010) and **Keri L. Ryan** (M. EERI, 1999).

- "Direct Displacement Based Design of a Novel Hybrid Structure: Steel Moment-Resisting Frames with Cross Laminated Timber Infill Walls" by Matiys A. Bezabeh, **Solomon Tesfamariam** (M. EERI, 2008), Siegfried F. Stiemer, **Marjan Popovski** (M. EERI, 2001), and Erol Karacabeyli.

- "Seismic Hazard in the Intermountain West" by Kathleen M. Haller, **Morgan P. Moschetti** (M. EERI, 2015), Charles S. Mueller, Sanaz Rezaeian, **Mark D. Petersen** (M. EERI, 2002), and Yuehua Zeng.

- "Assessing Integrated Earthquake Risk in OpenQuake with an Application to Mainland Portugal" by Christopher G. Burton and **Vitor Silva** (M. EERI, 2014).

- "The 2014 Update to the National Seismic Hazard Model in California" by Peter M. Powers and **Edward H. Field** (M. EERI, 1992).


- "Ground Motion Models Used in the 2014 U.S. National Seismic Hazard Maps" by Sanaz Rezaeian, **Mark D. Petersen** (M. EERI, 2002), and **Morgan P. Moschetti** (M. EERI, 2015).

- "Site Effects and Building Damage Characterization in Concepción after the Mw 8.8 Maule Earthquake" by **Gonzalo A. Montalva** (M. EERI, 2009), Francisco J. Chávez-Garcia, Andrés Tassara, and Darío M. Jara Weisser.

To read all current preprint manuscripts posted, visit [Earthquake Spectra preprints](https://www.earthquakespectra.org/preprints).

### New Confined Masonry Publication: Construction Guide for Low-Rise Confined Masonry Buildings

**Construction Guide for Low-Rise Confined Masonry Buildings**, a new publication from the Confined Masonry Network, addresses the needs of small-scale contractors, technicians, government staff, architects as well as non-governmental organizations involved in post-disaster reconstruction. This free guide has been written with users with various professional backgrounds in mind, including a workforce with little formal training. As a consequence this guide not only shows the practical detailing of confined masonry construction, but also offers a
wealth of basic information on good construction practices in general. The guide can be downloaded from the EERI Knowledge Center.

The guide is written by Tom Schacher (M. EERI, 2006) and Tim Hart (M. EERI, 2009) and was produced with funding provided by the Swiss Reinsurance Company (Zurich), the Swiss Agency for Development and Cooperation (SDC), the International Committee of the Red Cross (Geneva), and the Swiss Solidarity fund-raising organization (Geneva). Additional financial support came from Risk Management Solutions at the initiation of the project.

As confined masonry is a construction system that has been developed by practitioners in various countries in parallel, there is a lack of uniform rules on how it should be implemented correctly. In 2008, the Confined Masonry Network decided to tackle this issue by compiling a set of common rules from the various existing codes and guidelines on confined masonry and use them to develop a uniform set of guidelines. A first result has been the *Seismic Design Guide for Low-Rise Confined Masonry Buildings*, published by the network in 2011, which provides prescriptive design provisions for engineers who want to use this construction system. A third publication entitled *Engineered Guidelines for Confined Masonry* is under development and will be made available in 2016. For more information about confined masonry and the Confined Masonry Network, please visit: [http://www.confinedmasonry.org/](http://www.confinedmasonry.org/)

Welcome New EERI Members

EERI welcomes the members who have recently joined the Institute. If you wish to connect with your fellow members, you can locate their contact information in the EERI online membership directory, which requires logging in to the Member Resources Area of the EERI website.

**STUDENT MEMBERS**
Mohd Fadhli Abd Rashid, Universiti Teknologi Malaysia, Civil
Melek Alput, Ankara, Turkey, Civil
Mayanin Amezca De Leon, California State University Los Angeles, Civil
Muhammad Asyraaf Md. Arshad, Universiti Teknologi Malaysia, Civil
Halit Aydin, Karadeniz Teknik Universitesi, Civil
Miklos Bartha, Technical University of Cluj - Napoca, Civil
Matiyas Bezabeh, University of British Columbia, Structural
Nicola Branchini, University College London, Structural
Gabriella Buono, University of Puerto Rico, Civil
Andrei Caraza, Technical University of Cluj - Napoca, Architect
Jason Chen, University of British Columbia, Civil
Huseyin Cilsalar, SUNY Buffalo, Structural
Joseph Colletti, SUNY Buffalo, Geotechnical
Michael Colorado, Cal Poly Pomona, Civil
William Cope, California State University Sacramento, Civil
Joshua Core, Lehigh University, Structural
Daniel Cornea, Technical University of Cluj - Napoca, Civil
Eytan Fiszman, University of British Columbia, Structural
Grega Palang R. Gampilok, Universiti Teknologi Malaysia, Civil
Michael Gritzmacher, Lehigh University, Structural
Szidonia Haba, Technical University of Cluj - Napoca, Civil
Chen Huang, University College London, Structural
Ioana Iordache, Technical University of Cluj - Napoca, Civil
Abbas Jafari, Karadeniz Teknik Universitesi, Civil
Aida B. Jasni, Universiti Teknologi Malaysia, Civil
Raman Judge, McMaster University, Civil
Nur Shakila H. Khairi, Universiti Teknologi Malaysia, Civil
Marvin Ko, Purdue University, Structural
Amy Kordosky, Lehigh University, Structural
Konstantinos Kosmidis, University of California San Diego, Structural
Donghun Lee, SUNY Buffalo, Civil
Haoyu Li, University of British Columbia, Civil
Peter (Hanchen) Li, University of British Columbia, Civil
Baitao Liang, University of British Columbia, Civil
Faiz Syafiq Liasmat, Universiti Teknologi Malaysia, Civil
Ivan (Yichen) Ma, University of British Columbia, Geotechnical
James Mallard, University of California San Diego, Structural
Horia Marian, Technical University of Cluj - Napoca, Civil
Zorica Mileusnic, McMaster University, Civil
Mohd Amirul Asyraf A. Mohd Rosli, Universiti Teknologi Malaysia, Civil
Marius Monda, Technical University of Cluj - Napoca, Civil
Yuta Nakamura, University of Texas - Austin, Geotechnical
Arash Nassirpour, University College London, Structural
Patrick O'Brien, Virginia Tech, Structural
Ge Ou, Purdue University, Civil
Yagmur Ozyurt, Karadeniz Teknik Universitesi, Civil
Ariadne Palma-Parra, North Carolina State University, Civil
Get Involved with EERI

Looking to be more involved with EERI? We've come up with a list of opportunities for members. Each edition of *The Pulse* will highlight a way to do more.

*Get Involved with EERI*

Download the 25 Ways flyer (PDF)

#17: Share information on the use of confined masonry in your country.
The Confined Masonry Network has issued a new publication, *Construction Guide for Low-Rise Confined Masonry Buildings*. Read more above in the Publications section of this email, and obtain the guide through the EERI Knowledge Center.

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 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](http://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/](http://www.iaee.or.jp/) for more information.

**Sunday, February 07, 2021 - February 10**

**ASCE/UCLA San Fernando Earthquake Conference**
Wednesday, March 17, 2021 - March 19
EERI Annual Meeting