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

Craig Elliott Taylor (1945-2014)

It is with deep regret that we report the passing of long-time EERI member Craig E. Taylor (M. EERI, 1982). Craig was a friend and colleague to many of us and his passing leaves a chasm that can never be filled. As one of his close colleagues so appropriately stated, “Craig had a magical combination of a brilliant mind and an intuitive sense that made him come up with incredibly novel ideas.” Those of us who had the privilege of working with Craig will certainly miss his provocative nature, his extraordinary wit, and that great wry sense of humor.

Craig received a B.S. in philosophy from the University of Utah and an A.M. and Ph.D. from the University of Illinois in philosophy (logical theory). Craig worked for several consulting companies, including the J.H. Wiggins Company, Dames & Moore (now URS Corp.), EQE (now ABS Consulting Group), before starting his own company Natural Hazards Management, Inc. Recently, he was a Managing Partner at the Baseline Management Co. and a Research Affiliate of ImageCat, Inc. He has also had a distinguished academic career having served as an Adjunct Research Professor at the University of Southern California and a visiting professor at Tongji University in Shanghai City, China.

Craig began his career in 1978 with the Division of Comprehensive Emergency Management for the State of Utah as an Earthquake Safety Specialist/Research Consultant. In this position, Craig assembled a series of reports that outlined in detail innovative seismic risk assessment procedures for virtually every major lifeline system in Utah. These procedures resulted in recommendations for risk reduction that ultimately served as a key element of Utah’s Seismic Safety Program.
While at Dames & Moore, Craig was project manager on a Federal Emergency Management Agency study where he assessed the feasibility of incorporating risk reduction measures into a federal earthquake insurance program, should one be developed. This effort resulted in FEMA-200 and FEMA 201, as well as legislation drafted by Congress. Later on, Craig was instrumental in a study mandated by Congress to demonstrate the efficacy of FEMA-sponsored mitigation efforts in reducing future losses from natural hazards. This landmark study demonstrated that on average, a dollar spent by FEMA on hazard mitigation saves the nation about $4 through reduction of future losses. Craig was a co-recipient of an Applied Technology Council Award for Excellence for this work.

Craig was also deeply involved with improving catastrophe risk modeling for the insurance industry. Serving as Research Director for Baseline Management Co., Craig helped carve out a new direction in CAT modeling, one which strived for more comprehensive simulation of risk and uncertainty. This recent work built on earlier seminal work performed by Craig while at Dames & Moore in the early 1990’s that introduced the notion of incremental real-time risk assessment and risk-based pricing in underwriting. Most recently, he developed a series of methods and indices known collectively as “Robust Simulation” to characterize uncertainty in CAT modeling estimates in a manner appropriate for identifying extreme risks.

In addition, Craig has left a huge legacy in promoting new methods and ideas in multi-hazard, disaster risk management. Working in various capacities, Craig promulgated the notion “systems-based” solutions to complex problems and often shared these ideas with others in his extensive professional society work. Craig was a founding member of the ASCE Council on Disaster Risk Management (CDRM). He chaired CDRM’s executive committee from 2005 to 2007, and served on its awards committee and advisory board. He was a long time editor for CDRM's Natural Hazards Review journal as well as editor and author of several CDRM monographs and papers. During his tenure at CDRM, he inspired countless colleagues in topics ranging from risk and vulnerability, risk-informed decision making, and advances in information technology for analyses and risk communication. At the time of his passing, Craig was co-organizing a mini-symposium to facilitate an international exchange on policy implications relating to natural hazard risks. Craig was also actively involved with the ASCE Technical Council on Lifeline Earthquake Engineering (TCLEE) having been awarded the 2006 TCLEE Lifetime Contribution Award.

Craig is survived by his wife, Gayle, four grown children and four grandchildren.

A Celebration of Life service will be held on **July 12, 2014** at 10:00 a.m. at the South Coast Botanic Garden on the Palos Verdes Peninsula where friends, colleagues and family can share memories of Craig with others. For more information, you can contact either Ron Eguchi (rte@imagecatinc.com) or Charlie Huyck (ckh@imagecatinc.com).

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JoAnn Browning, associate dean of administration and professor of civil engineering in the School of Engineering at the University of Kansas, has been named dean and David and Jennifer Spencer Distinguished Chair of The University of Texas at San Antonio College of Engineering. She will begin her duties in the college Aug. 1, 2014.

Browning earned both her bachelor's and master's degrees in civil engineering from the University of Kentucky. She earned her Ph.D. in civil engineering from Purdue University and joined the faculty at KU as assistant professor in 1998, earning tenure in 2004 and promotion to full professor in 2010.

Browning's research interests include structural engineering, earthquake engineering, engineering materials, and reinforced concrete design and analysis. She is actively involved in research to improve the durability of concrete bridge decks through studies of corrosion protection systems and low-cracking high performance bridge decks. Her work also is aimed at improving the design and performance of concrete bridges subjected to earthquake motion. She received the American Concrete Institute's Young Member Award for Professional Achievement in 2008 and was named an ACI Fellow in 2009.

For more details, visit the UTSA Today website.

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Sharon Wood Appointed UT Austin's Engineering Dean

The University of Texas at Austin's Cockrell School of Engineering has named engineering professor and earthquake response expert Sharon Wood (M. EERI, 1986) as the school's ninth dean. Wood has served as interim dean since October 2013 and she will assume her new post — which historically has strong ties to the private sector — permanently on September 1, according to an announcement.

She replaces Gregory Fenves (M. EERI, 1985), who was dean for five years before being named UT's provost. Wood's appointment accompanies news of the construction of the Engineering Education and Research Center, a space for research, teaching and student projects.

Wood's previous experience extends to heading UT's Department of Civil, Architectural and Environmental Engineering for five years before becoming interim dean. She also serves as the vice president of Michigan-based American Concrete Institute and has been on the federal advisory committees for the Department of Veterans Affairs, the National Earthquake Hazards Reduction Program, and the U.S. Geological Survey.

For more details, visit the Austin Business Journal website.

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Mehmet Çelebi Received the DOI-USGS Meritorious Service Award

During a ceremony on May 6, 2014, at the U.S. Geological Survey (USGS) Headquarters in Reston, Virginia, long-time EERI member Mehmet Çelebi (M. EERI, 1980) of Earthquake Science Center of USGS in Menlo Park, California, was awarded the DOI-USGS Meritorious Service Award.
Celebi received the Meritorious Service Award for his work related to structural monitoring, structural health monitoring, studies on understanding the observed dynamic response of man-made structures to low-level and strong shaking levels of earthquake motions. These studies are part of earthquake hazard mitigation mission of the USGS.

The Meritorious Service Award was established in 1948 and is the second highest departmental award that can be granted a career employee.

LEARNING FROM EARTHQUAKES

GEER-EERI-ATC Report on February 2014 Cephalonia Earthquakes

Two major earthquakes with Mw = 6.0 and Mw = 6.1 hit the Cephalonia Island of Greece on January 26th and February 3rd of 2014, respectively. The reconnaissance mission was unique in two ways: First, it brought together the local, highly qualified earthquake engineering community, with a U.S. collaborative team of the Geotechnical Extreme Events Reconnaissance (GEER) Association, EERI, and the Applied Technology Council (ATC) to form a multidisciplinary 70-person team. Second, the resiliency of the building stock, geostructures, and communities that were subjected to one of the highest sequences of ground motions ever recorded in Europe provided the opportunity to focus on collecting data on good and bad performance marks a new era of reconnaissance.

The reconnaissance team, coordinated by Sissy Nikolaou (M. EERI, 2004), worked with representatives from Greek universities and local EERI members to investigate and document observations. Team member Ramon Gilsanz (M. EERI, 2011), a structural engineer with expertise in concrete construction and non-structural damage, represented both EERI and ATC and worked directly with Greek structural engineers to document structural damage.

The reconnaissance report (Version 1) is available at www.geerassociation.org with observations on: (i) seismological and recorded motions; (ii) geotechnical aspects; (iii) rigid blocks behavior; (iv) structural response; (v) infrastructure lifelines; (vi) nonstructural components response; and (v) economical and societal aspects.
10NCEE Updates: Online Program, SDC, and NEES Quake Summit

The Tenth U.S. National Conference on Earthquake Engineering (10NCEE) in Anchorage, Alaska, July 21â€“25, 2014, will be held on the 50th Anniversary of the Great Alaska earthquake and tsunami. The theme for the conference is “Frontiers of Earthquake Engineering.” More than 1,000 participants from over 41 countries have registered for 10NCEE, including 250 students and 50 exhibitors. Information about Travel and Lodging, Airline Discounts, Pre-Conference Events, and Thursday Evening at the Alaska Native Heritage Center is available at www.10ncee.org.

10NCEE Online Program
The full program for 10NCEE, including room assignments, is available online at http://www.10ncee.org/program. The program includes over 1,000 presentations in 130 sessions, including 27 invited presentations by distinguished speakers in the plenary and theme sessions. The online program is completely searchable and can be used to search for presentations by colleagues or to find presentations by keyword.

Questions or concerns about the online program should be sent to 10ncee@eeri.org.

EERI Seismic Design Competition Schedule
Over 30 teams from universities across the U.S. and around the world will be competing in the 2014 EERI undergraduate Student Seismic Design Competition (SDC), organized by the EERI Student Leadership Council (SLC). The competition schedule for the SDC is available online at http://10ncee.org/program/seismic-design-competition.

Wednesday is the SDC presentation day when each team presents their model to a panel and is judged on the structural system concept, the analysis method, the clarity and organization of the presentation, and their communication skills. Thursday is dedicated to shake table testing of the complex tall building models made from balsa wood and weighing no more than 7 pounds.


NEES Quakes Summit Program
The schedule for the 2014 NEES Quake Summit Activities is available online http://10ncee.org/program/nees-quake-summit-2014. Pre-Conference Workshops and Meetings will be held on Sunday for NEES Governance Board and on Monday for NEES committee meetings. Don't miss the Plenary Session on the "Global Impact of NEES" and the NEES Concurrent Theme Sessions on Thursday morning followed by the NEES Project Showcase at the NEES Luncheon.

For more information about NEES, visit: https://nees.org/quakesummit2014.

EERI Outstanding Student Paper Awardees: Brett Maurer and Mark Tilashalski
The purpose of the EERI Outstanding Student Papers Competition is to promote active involvement of students in earthquake engineering and the earthquake hazards community. Graduate and undergraduate students submitted papers into the competition. The papers are original work and are judged based on their contribution to the field and their overall quality.

This year the committee had a very difficult task, because there were so many excellent papers submitted to the student paper competition. The committee judged each paper based on technical merit, clarity of expression, and relevance for the earthquake engineering community. The process works quite well, and the Student Activities Committee came to a unanimous decision for both the undergraduate and graduate paper competitions in the deliberations following synthesis of the individual judge's rankings.

The following students were awarded 2013 EERI Outstanding Graduate and Undergraduate Papers:

"Moving Towards An Improved Index for Assessing Liquefaction Hazard: Lessons from Historical Data"

Brett Maurer, Virginia Tech

Brett Maurer (M. EERI, 2014) is a Ph.D. student in the department of civil engineering at Virginia Tech (VT) working in the geotechnical engineering program. His research advisor at VT is Professor Russell Green (M. EERI, 1983), and he works closely with Misko Cubrinovski and Brendon Bradley (M. EERI, 2012) of the University of Canterbury, New Zealand. Brett's research focuses on improving liquefaction hazard models, which are widely used for hazard mapping and in the engineering design of infrastructure.

Paper Abstract: While Liquefaction Potential Index (LPI) has been used to assess liquefaction hazards worldwide, recent evaluations of LPI have found its performance to be inconsistent, ranging from largely erroneous, to generally efficacious but inaccurate for a portion of sites. Given the preeminent role of LPI in practice, efforts to improve its efficacy are thus warranted. In 1985, Ishihara considered the influence of the non-liquefied surface layer on the manifestation of liquefaction, and proposed an empirical approach to predict liquefaction surface effects. Accordingly, this study investigates what insights the boundary curves proposed by Ishihara may provide for improving the existing LPI framework. From this historical data, a novel Ishihara-inspired index, LPIISH, is derived. Its performance is evaluated using select liquefaction case histories and is compared to that of the existing LPI framework commonly used in practice. For the selected case studies, LPIISH was found to be consonant with observed surface effects and showed improvement over LPI in mitigating false-positive predictions. This study highlights deficiencies with existing liquefaction hazard assessment and presents an alternative index for discussion. Ultimately, the influence of non-liquefiable layers on surficial manifestation is complex, and further research is needed to fully elucidate and quantify these effects.

"Study of Site Specific Seismic Amplification in the National Capital Region"

Mark Tilashalski, Virginia Tech

Mark Tilashalski is pursuing his master's degree in civil engineering at Virginia Tech and researching the effects of site amplification on the East Coast. Mark wrote this paper as a culmination of the research that he performed as an undergraduate student.

Paper Abstract: The current NEHRP procedures for simplified seismic design use the average shear wave velocity in the top 30 meters of a profile (Vs30) as a basis for design. This procedure was developed empirically from ground motions recorded in the Western United States (WUS). The simplified design method appears to be inadequate for characterizing site amplification in locations where the subsurface profile includes a sharp increase in shear wave velocity at shallow depths. This is a common feature for sites in the Central and Eastern United
States (CEUS). Short soil stacks sitting atop hard rock are especially prevalent along the Atlantic Fall Line in the CEUS. This study analyzes site amplification characteristics for six sites from the National Capital Region (NCR) which is situated along the Fall Line. Ground surface motions are computed at each site using 14 different hazard consistent bedrock motions. The results indicate that short-period amplification factors (Fa) for the NCR greatly exceed the values predicted by the current NEHRP guidelines.

To learn more about the EERI Outstanding Paper Award, visit the EERI website at https://www.eeri.org/about-eeri/honors-awards/outstanding-paper-award/.

See the full list of 2014 EERI Award Recipients at http://bit.ly/1c3HttF.

Earthquake Spectra Preprints

In late May and early June, several preprint manuscripts were posted on the Earthquake Spectra website prior to their formal publication. The list of new preprint manuscripts, including authors, follows:

- "Classification of Mainshocks and Aftershocks in NGA-West2 Database" by Kathryn Wooddell and Norman Abrahamson (M. EERI, 1984)
- "Framework for Comprehensive Assessment of a City's Natural Disaster Risk" by Susan A. Brink (M. EERI, 2010) and Rachel A. Davidson (M. EERI, 1995)
- "Inelastic Higher-Mode Response in Reinforced Concrete Wall Structures" by Domenico Pennucci, Timothy J. Sullivan, and Gian Michele Calvi
- "Development of Collapse Indicators for Risk Assessment of Older-Type Reinforced Concrete Buildings" by Panagiotis H. Galanis (M. EERI, 2012) and Jack P. Moehle (M. EERI, 1981)

To read preprint manuscripts or browse the complete list of preprint manuscripts, visit the Earthquake Spectra website at http://earthquakespectra.org/toc/eqsa/0/0.

In addition, the Spectra editors also posted a Special Collection of Preprints of the papers that will be published in the NGA-West2 special issue (forthcoming, August 2014).
Seismic Observatory for Community Resilience - A Program to Learn from Earthquakes

In March 2014, EERI sent an interdisciplinary research team to New Zealand to study issues related to Canterbury's recovery from the 2010-2011 earthquake sequence. The study is part of a National Science Foundation grant entitled "Seismic Observatory for Community Resilience - A Program to Learn from Earthquakes." EERI's internal goal for the NSF project is to evolve EERI's Learning from Earthquakes program beyond immediate post-disaster investigations toward learning about community recovery from earthquakes. Outcomes of the project will include guidance for conducting long-term recovery reconnaissance, as well as methods for systematic data collection, archiving, and dissemination of reconnaissance findings.

The aim of the New Zealand case study was to observe and understand how stakeholders in New Zealand are measuring, monitoring, and acting upon data-driven indicators of recovery after the Canterbury earthquakes. The team found that a large variety of data are being collected as part of the recovery, for example a province-wide survey of well-being, but it does not appear the available data was significantly contributing to ongoing decision making. The large volume of data is making it challenging for organizations to analyze and interpret it for decision-making. The public health sector, however, seems to be an exemplar for using data for recovery decision-making. Data describing social vulnerability, homelessness, out-migration, business recovery, and the rental market were found to be less well documented. And while the disaster motivated unprecedented levels of data sharing within and between public and private organizations, privacy concerns and silo-ism still presented challenges. A possible role for the EERI Learning from Earthquakes program for long-term recovery reconnaissance could be the facilitation of analysis of existing data, promoting access to data that can be compared across disasters, and specific guidance on what data should be collected by researchers to be archived in the Seismic Observatory for Community Resilience.

The five-member team interviewed a wide range of decision-makers and researchers. A broad cross-section of organizations were represented, including University of Canterbury, Lincoln University, Massey University, Victoria University, University of Otago, Canterbury Earthquake Recovery Authority, Christchurch City Council, Strong Christchurch Infrastructure Rebuild Team, Canterbury Development Corporation, Canterbury Public Health Board, GNS, Ministry of Education, Statistics New Zealand, Ministry of Business, Innovation and Employment, Land Information New Zealand, Building Officials Institute of New Zealand, New Zealand Reserve Bank, Human Rights Commission, ResOrgs, Canterbury Employers Chamber of Commerce, Christchurch and Canterbury Tourism Board, and New Zealand Historical Places Trust New Zealand.
The five-member team led by Scott Miles (M. EERI, 2009), Western Washington University, included Nick Hedley (M. EERI, 2014), Simon Fraser University; Chris Poland (M. EERI, 1998), consulting engineer; Liesel Ritchie (M. EERI, 2012), Natural Hazards Center; and Yu Xiao (M. EERI, 2011), Texas A&M University. Combined expertise of the team includes sociology, geography, urban planning, information systems, and engineering.

STUDENT SPOTLIGHT

New EERI Student Chapter at McMaster University

EERI is pleased to announce that a new EERI student chapter has been established at McMaster University in Hamilton, Ontario, Canada. The university's engineering department has a long history of active research in earthquake engineering.

Dr. Dimitrios Konstantinidis (M. EERI, 2001), assistant professor in the department of civil engineering, will act as the student chapter's faculty advisor. Dr. Lydell Wiebe (M. EERI, 2014), assistant professor in the department of civil engineering, will serve as liaison between the student chapter and other EERI members in the area.


ANNOUNCEMENTS

7th International Conference on Structural Health Monitoring of Intelligent Infrastructure

The 7th International Conference on Structural Health Monitoring of Intelligent Infrastructure (SHMII) will be held July 1-3, 2015, in Torino, Italy. The scientific program will include state-of-the-art lectures, round tables, oral communications and poster sessions.
Keynote speakers and invited speakers will present their view on advances and future trends in structural health monitoring of intelligent infrastructure. Hundreds of international scientists, engineers, and researchers from all over the world will have the opportunity to share their experience with their peers in a stimulating scientific and cultural environment.

For more conference information, visit the SHMII website at www.shmii2015.org.

Northridge 20 Summary Report Released

The Steering Committee of the Northridge 20 Symposium, held in Los Angeles on January 16-17, 2014, has released a summary report on proceedings, findings, and preliminary recommendations from the event.

On the twentieth anniversary of the 1994 Northridge earthquake, more than 600 people gathered to share the impacts, highlight accomplishments of the past two decades, and identify necessary steps forward to make our communities more resilient to future earthquakes. The Northridge 20 Symposium drew participants from a broad range of disciplines, including earth scientists, structural engineers, risk modelers, emergency managers, and public officials. Read the Northridge 20 Summary Report (PDF).

For more information, visit the PEER website.

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

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/