



## EARTHQUAKE ENGINEERING RESEARCH INSTITUTE NEWSLETTER

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### EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

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### News of the Institute

## Registration Open: Nonstructural Seminar

Registration is now open at <https://www.eeri.org/registration/tech-seminar.php> for a new one-day EERI technical seminar on **Seismic Design and Performance of Nonstructural Elements**, with support from FEMA/Department of Homeland Security. Attendees will receive a notebook of seminar presentations and lunch plus earn 6 Professional Development Hours. The online registration site has a link to the seminar brochure PDF with details on the program, presenters, venues, and a printable form to register by fax or mail, if preferred.

Seminar dates and locations are Thursday, **October 27**, in San Francisco, California; Friday, **October 28**, in Seattle, Washington; Thursday, **November 3**, in Los Angeles, California; and Friday, **November 4**, in San Diego, California.

Learn about the performance of nonstructural elements in recent earthquakes, current large-scale experimental research, present code requirements, the updated and newly released *FEMA E-74* guide on nonstructural design, and implementation of new requirements for equipment certification. In several recent earthquakes, costs from nonstructural damage exceeded costs due to structural damage because of severe impacts to mechanical, architectural, electrical, and plumbing systems. Only 15-25% of original construction costs are for the structure, and this EERI Technical Seminar puts the spotlight on the other 75-85% of the investment.

Registration fees are \$225 for EERI and cosponsor members, \$300 for nonmembers, and \$125 for EERI student and young professional members. EERI members in western states received the printed brochure in the mail in August; you are encouraged to share it with others!

## Housner Fellows Program Launching Soon

Professor George W. Housner (1910-2008), who served as EERI president for 11 years, left a substantial gift to the Institute "to advance the objectives of EERI." A founding member of EERI and the International Association for Earthquake Engineering, Housner was a visionary leader in the earthquake field and an advisor on public policy. He sought to educate engineers of the highest caliber and enable them to improve earthquake safety worldwide. A September 2009 workshop was convened by the Board of Directors to consider how best to use Housner's gift. The participants' recommendation was for the gift to be used to develop an EERI Housner Fellows Program. Work has been underway for two years to develop the program, and the first class of Fellows will be selected before the end of the year.

The program will be a combination of mentoring, group project work, and a week-long leadership training institute. The program's overall objective is to equip promising and motivated young and mid-career professionals with the confidence and skills needed to exercise leadership in advocating for earthquake risk reduction throughout their careers in the professional and volunteer settings of their choice.

Each class of five to seven participants will make a two-year commitment. EERI member Lucy Arendt, professor of management at the University of Wisconsin, will manage the week-long training institute and an orientation session prior to EERI's Annual Meeting.

In addition to the Housner gift, additional funding for the program is being provided by EERI, the Global Facility for Disaster Reduction and Recovery

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## Learning from Earthquakes

### M 5.8 Virginia Earthquake of August 23, 2011

At 1:51 EDT on Tuesday, August 23<sup>rd</sup>, an M 5.8 earthquake with its epicenter in northern Virginia, 135 km (84 miles) SW from Washington, D.C., shook most of the East Coast, with people reporting shaking from Georgia to Canada. Seismic waves are able to reverberate with little attenuation and travel long distances in the eastern United States, which is mainly composed of older rock that has not been frac-



*Pinnacle damage at the National Cathedral in Washington, D.C. (photo: Nat'l Cathedral).*

tured by frequent earthquake activity in the recent geologic past. It is less able to absorb seismic energy than the West Coast's active earthquake zone, where the highly fractured and crushed rock can absorb more seismic energy.

There were no immediate reports of deaths, but fire officials in Washington, D.C., said there were some injuries. Significant business interruptions occurred from New York City to Richmond, Virginia. Unreinforced masonry walls, gable walls, and chimney collapses were the most common failures, with some historic buildings losing architectural parapets. Ceiling tile failures, overturning furniture, and objects falling from shelves in homes and businesses added to the damage and disruption. The earthquake resulted in the automatic shutdown of the nuclear reactors at the North Anna Power Station (7 miles from the epicenter), which had to use backup generators to keep spent nuclear fuel cooled. The earthquake tied up phone and internet connections, disrupted rail lines, and caused extensive traffic delays. Airports in the New York and Washington, D.C., areas issued ground stops "due to earthquake." People poured out of buildings and onto the sidewalks in both cities. According to news reports, the earthquake caused widespread confusion between the public and emergency personnel on how to respond. EERI will use this event to remind earthquake professionals, federal agencies, members of Congress and the public that earthquakes are not just a West Coast problem. The importance of preparedness needs to be underscored.

EERI is organizing a team of East Coast members, with Bill Anderson and Jim Beavers as co-team leaders, tentatively focusing on four major theme areas: the response and performance of the nuclear power plant in North Anna, Virginia, including the automatic shutdown procedures; the importance of preparedness (and the consequences of not knowing what to do) for building closures, evacuations, and communications; the effects of ground shaking on buildings and infrastructure, including structural, nonstructural, and geotechnical damage; and economic losses, including damage to several important national monuments as well as business and societal interruption costs. If you are interested in participating in this documentation, contact Marjorie Greene at EERI ([mgreene@eeri.org](mailto:mgreene@eeri.org)). EERI has established a virtual clearinghouse at [www.eeri.org](http://www.eeri.org) where members and others can post observations on the event. A few members will each take responsibility for one of the theme areas identified. Each will summarize observations related to the team's theme. These summaries will then be compiled into a brief report. This work will be done in coordination with several other partner organizations, including the US Geological Survey, GEER, and NIST. The report will be distributed widely, including to Congress and federal agencies.

## Japan Tsunami Videos Online

EERI member Shunsuke Otani provided EERI with several videos of the Japan tsunami of March 11, 2011. Two one-hour videos taken at the Kamaishi Port contain footage that shows not only the tsunami itself but also people's reactions to tsunami warnings, including fishermen being told to leave the harbor. The videos were recorded by the Kamaishi Port Office, Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

Several shorter videos from Kuji Port show the arrival of the tsunami from different angles. To view the videos, visit <http://www.youtube.com/user/EERIvideos>.

EERI is looking for help in translating some of the conversations on the two long videos. If you are interested in helping, please contact Marjorie Greene at [mgreene@eeri.org](mailto:mgreene@eeri.org).

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## Housner Fellows Program

*continued from page 1*

(GFDRR) of the World Bank, and the Federal Emergency Management Agency. After successful completion of the program, participants will be EERI Housner Fellows or EERI Housner-GFDRR Fellows (the international participants) for life, with the expectation that they will continue to play a leadership role in their professional and civic communities.

A management committee will oversee the final development of the program and the selection of the first class of Fellows. Committee members include Bill Iwan (chair), David Applegate, Svetlana Brzev, Arrietta Chakos, Andre Filiatrault, David Friedman, John Hooper, Simin Naaseh, Chris Poland, Ken Stokoe, Tom Tobin, and Susan Tubbesing. Marjorie Greene is providing staff support. Look for details of the program and the application process in an e-mail in mid-September and in the October *Newsletter*. Applications will be due November 18, 2011.

## News of the Institute

### NEHRP Graduate Fellowship Goes to Franke

Kevin W. Franke, a Ph.D. candidate in civil and environmental engineering at Brigham Young University in Provo, Utah, has been selected as the 2011-2012 NEHRP Graduate Fellow in Earthquake Hazard Reduction. EERI awards this fellowship each year in a cooperative program with the Federal Emergency Management Agency's National Earthquake Hazards Reduction Program.



*Kevin Franke with his family.*

The award is given to foster the participation of capable individuals in furthering the goals and practice of earthquake hazard mitigation. The fellowship provides \$12,000 for a nine-month stipend and \$8,000 for tuition, fees, and research expenses. Franke was chosen from a group of 12 well-qualified applicants from the fields of geology and structural and geotechnical engineering at universities in California, Colorado, Georgia, Illinois, Iowa, Maryland, Massachusetts, Michigan, Utah, and Virginia. The fellowship applications were reviewed by a committee chaired by Scott Olson of the University of Illinois (chair of the EERI Student Activities Committee).

Before returning to school to pursue a Ph.D., Franke worked for nearly six years as an engineering consultant for URS Corporation and Kleinfelder, applying probabilistic analysis to slope stability and earthquake risk assessment. Franke intends to pursue new applications of performance-based earthquake engineering (PBEE) in the geotechnical arena. His research at BYU, under the supervision of Professor Kyle Rollins (M.EERI), focuses on developing a new PB procedure to compute kinematic pile response due to lateral spreading. This research also includes bringing to light a series of unstudied lateral spreading case histories from the 1991 Limon, Costa Rica, earthquake, thus greatly increasing the number of case histories available to researchers. Franke and Rollins recently performed geotechnical investigations at five Costa Rica bridge sites that were damaged in the 1991 event. While detailed measurements of lateral spread displacements and resulting bridge displacements were made immediately after the earthquake, soil information has been unavailable until now. These case histories will allow Franke to evaluate the accuracy of a variety of existing methods for predicting bridge performance. His flexible probabilistic analysis approach could potentially incorporate a variety of analysis techniques into a PB design framework that would allow users to select their preferred design procedures. This research will provide engineers with a new set of valuable tools to aid in making objective risk-based decisions related to seismic foundation performance and will also provide a basis for future PB research.

Professor Steve Kramer (M.EERI), who had been Franke's advisor for his master's degree thesis research at the University of Washington, states that the outcome of Franke's proposal has the potential to be "extremely valuable, particularly considering the relatively small number of earthquakes for which case histories of lateral spreading have been carefully documented."

Upon completing his degree, Franke plans to become a college professor, where his experience as a consultant will aid in his mentoring and training the next generation of earthquake engineering professionals. Over the past year, Franke has already mentored several graduate students pursuing master's degrees as part of a BYU-sponsored program.

## Publication

### Operational Earthquake Forecasting Report

The final report of the International Commission on Earthquake Forecasting (ICEF) for Civil Protection, entitled "Operational Earthquake Forecasting: State of Knowledge and Guidelines for Implementation," was recently published in *Annals of Geophysics* (vol. 54, num. 4, pp. 315-391, 2011; doi: 10.4401/ag-5350). The ICEF is chaired by Thomas H. Jordan (M.EERI), director of the Southern California Earthquake Center.

The complete report can be freely downloaded from <http://www.annalsofgeophysics.eu/index.php/annals/article/view/5350>.

The report has been accepted by the Italian Department of Civil Protection, which commissioned the study immediately following the L'Aquila earthquake of April 6, 2009. Although written in response to this request, the Commission hopes that the report will be useful to other countries developing operational forecasting procedures and protocols.

The ICEF findings and recommendations, released in October 2009, were endorsed by the International Association of Seismology and Physics of the Earth's Interior at the 2011 meeting of the International Union of Geodesy and Geophysics in July (Resolution 4 at [http://www.iaspei.org/resolutions/resolutions\\_2011\\_melbourne.pdf](http://www.iaspei.org/resolutions/resolutions_2011_melbourne.pdf)), in recognition of their potential for improving earthquake forecasting both in Italy and elsewhere.



## News of the Institute

### Stone Masonry Tutorial Now Online

World Housing Encyclopedia participants Jitendra Bothara of New Zealand and Svetlana Brzev of Canada led a multi-year effort to develop the tutorial, *Improving the Seismic Performance of Stone Masonry Buildings*, focused on traditional stone masonry dwellings primarily in the earthquake-prone countries of Asia. While the use of stone for construction has substantially decreased in the last few decades with the advent of new materials and techniques, it is still used in parts of the world where stone is locally available and affordable.

The seismic vulnerability of these

buildings is due to their heavy weight and, in most cases, the manner in which the walls have been built. The tutorial explains the underlying causes for their poor seismic performance and offers techniques for improving it for both new and existing buildings. The proposed techniques have been proven in field applications, are relatively simple, and can be applied in areas with limited artisan skills and tools. An effort has also been made to include some stone masonry construction techniques used in other parts of the world, such as Europe.

The authors believe that implementation of the suggested recommendations will significantly reduce risk to the occupants of nonengineered stone masonry buildings and their personal property in future earth-

quakes. This document will be useful to building professionals who want to learn more about this construction practice, either for the purpose of seismic mitigation or for post-earthquake reconstruction.

The tutorial is currently available for download on the new tutorial section of the WHE website: <http://www.world-housing.net/tutorials/stone/tutorials>. Plans are also underway to print and distribute copies, primarily in developing countries where such construction is still used.

Production of this tutorial has been supported in part by generous contributions from the New Zealand Society for Earthquake Engineering and the Earthquake Engineering Center of the University of Engineering and Technology, Peshawar, Pakistan.

## Announcements

### Remote Sensing Symposium & Workshop

A one-day Symposium on Remote Sensing for Disaster Response will be held September 14, 2011, at Stanford University, bringing together researchers and scientists, emergency management specialists, catastrophe responders, remote sensing and GIS experts, industry practitioners from the insurance market, urban and city planners, and others to discuss future directions in remote sensing technology and rapid information extraction for disaster response. A multidisciplinary group of panelists from some of the leading research and development institutions in the country will be presenting. Specialists will examine the challenges and opportunities associated with technology adoption and implementation, end-user requirements and expectations, and future directions in the field. The symposium is being organized by the John A. Blume Earthquake Engineering Center and is cosponsored by Risk Management Solutions (RMS), ImageCat, EERI, PEER, MCEER and USGS. For more information and to register, visit [http://blume.stanford.edu/remote\\_sensing\\_symposium](http://blume.stanford.edu/remote_sensing_symposium).

Following the symposium, the two-day 9th International Workshop on Remote Sensing for Disaster Response will be held September 15-16. For more information, visit: [http://blume.stanford.edu/9th\\_remote\\_sensing\\_workshop](http://blume.stanford.edu/9th_remote_sensing_workshop).

## Call for Papers

### China Conference on Research Challenges

The Institute of Engineering Mechanics of the China Earthquake Administration has issued a call for papers for the International Conference on Earthquake Engineering: Research Challenges in the 21<sup>st</sup> Century, to be held May 18-21, 2012, in Harbin, China. The conference will commemorate the 100<sup>th</sup> anniversary of the birth of Professor Huixian Liu, the founder of earthquake engineering in China. Papers are invited on the full range of topics in the multidisciplinary earthquake fields. Abstracts are due November 30, 2011. For more information, e-mail Ms. Bing Bai, [iceer2012@iem.cn](mailto:iceer2012@iem.cn).

### Geotechnical Short Course

Virginia Tech and the Center for Geotechnical Practice and Research Continuing and Professional Education are sponsoring a two-day short course on Geotechnical Earthquake Engineering December 6-7, 2011, at Virginia Tech in Blacksburg. The

course is geared for engineering staff from project level engineers through senior level managers. It will cover the basics of earthquake geology and engineering seismology, methods to determine ground motion parameters for analysis and design, applicable ground motion predictive equations for site-specific seismic hazard analysis, procedures

for evaluating the seismic stability of slopes and retaining walls, and procedures for evaluating liquefaction potential and associated phenomena. The presenters are EERI members Russell Green, Adrian Rodriguez-Marek, and Luis B. Fargier-Gabaldon.

The registration fee is \$1,050. To register online, visit [www.cpe.vt.edu/gee/](http://www.cpe.vt.edu/gee/) by November 23, 2011.

## News of the Profession

### School Seismic Grants in Oregon

The state of Oregon's Legislature, on its last day in session on June 30, restored \$7.5 million to the 2011-2013 budget to continue Oregon's unique school seismic grants program. In late 2010, former Governor Ted Kulongoski had removed \$7.5M from the 2009-2011 budget because of debt capacity problems. In February, the state treasurer had announced some additional debt capacity. Later that month, the Oregon Seismic Safety Policy Advisory Commission (OSSPAC) wrote to newly elected Governor John Kitzhaber requesting general obligation bonds for seismic rehabilitation.

The \$7.5M authorization was added as Section 41 to Senate Bill 5508, which passed by a vote of 23-4. While it is a small amount, it is meaningful in a difficult economy and keeps the program operating for K-12 schools. It may be expanded in future sessions when the economy rebounds. Oregon's "Cool Schools" legislation also passed this session with Governor Kitzhaber's support. It gives schools that undergo seismic retrofits priority in eligibility for energy efficiency upgrades.

EERI member Yumei Wang credits the efforts of parent advocate Edward Wolf as being influential in obtaining the \$7.5M. He informed people about the Cascadia threat to schools through the media by writing editorials, informing legislators and the governor's staff, and engaging lobbyists, the Oregon PTA, and many others. He co-authored, along with Barry Welliver (M.EERI) of Utah and Nancy Bailey of Tennessee, the article "Buildings, Not Drills, Hold Key to Disaster-Proof Schools," focusing on the Pacific Northwest, the Wasatch Front, and the New Madrid Seismic Zone. The commentary was posted in July on the *Education Week* website, the newspaper of record for K-12 education nationwide.

## NEES News

### NEEShub Project Warehouse: Data Updates

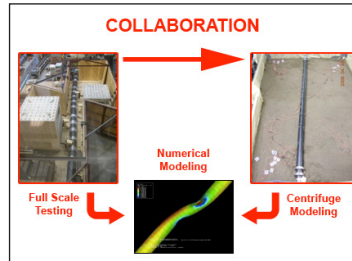
The Project Warehouse on the NEEShub is the centralized data repository for sharing and publishing earthquake engineering research data from experimental and numerical studies. The data in the Project Warehouse are associated with research projects funded by a variety of agencies and include experiments performed at NEES and non-NEES equipment sites. Two highlighted projects, which take advantage of data viewing within the NEEShub using the tool INDEED, are summarized below.

#### Behavior of Braced Steel Frames With Innovative Bracing Schemes (<http://nees.org/warehouse/project/0024>), PIs: Roberto Leon (Georgia



Tech), Bozidar Stojadinovic (UC Berkeley), Andrei Reinhorn (University at Buffalo), Benson Shing (UCSD), Reginald DesRoches (Georgia Tech). Shaking table (University at Buffalo), pseudo dynamic (UC Berkeley and UC Boulder), and static cyclic experiments (Georgia Tech) were performed to investigate the behavior of braced "zipper" steel frames. The tests focused on 1/3 scale three-story 2D sub-assemblages under a range of dynamic and static loads to characterize the behavior of the zipper elements when the chevron braces buckled. The zipper frame exhibited great strength and capacity to dissipate hysteretic energy and remained stable under the strong ground motion imposed. The data include forces, displacements and strains measured during the tests.

#### Evaluation of Ground Rupture Effects on Critical Lifelines (<http://nees.org/warehouse/project/0013>), PIs: Tom



O'Rourke, Harry Stewart (Cornell University), Michael O'Rourke, Michael Symans (RPI), Kathy Krafft (Ithaca Sciencenter). A suite of experiments was performed to investigate the performance of buried pipelines and conduits subjected to large ground deformations. Full-scale laboratory tests were performed at Cornell University and small-scale centrifuge

tests were conducted at the geotechnical centrifuge at RPI. The tests focused on the response of buried pipelines to abrupt ground displacements that induce tension, compression, and bending in the pipelines. The ground deformation involves both strike slip and normal faulting. The investigated pipelines were composed of continuous welded steel and high density polyethylene (HDPE). The available data include soil and pipeline displacements, soil-pipeline interaction pressures, strain gage measurements at locations along the pipelines, load cell measurements of axial forces, and for the large-scale tests, lab data on partially saturated soil properties.

### Real-Time Hybrid Simulation Workshop

A two-day workshop on Advances in Real-Time Hybrid Simulation will be held on October 10-11, 2011, at the Lehigh Network for Earthquake Engineering Simulation (NEES) facility. Registration is free. Travel support is available for U.S. participants.

To be eligible for travel support, register before September 12; others should register before October 1.

For more information and to register, visit <https://nees.org/announcements/realtimehybridsimulationworkshop>.

## News of the Membership

### Holmes, MacRae on New Zealand Commission

EERI members William Holmes, a senior consultant at Rutherford & Chekene in San Francisco, California, and Gregory MacRae, an associate professor at the University of Canterbury, have been named structural consultants to the New Zealand Royal Commission of Inquiry investigating the recent Christchurch earthquakes.

Holmes will be reviewing and commenting on the report being prepared for the Department of Building and Housing's investigation of the performance of four buildings: Canterbury TV, Pyne Gould Corporation, Grand Chancellor, and Forsyth Barr. He is also assisting with the review of the performance of other buildings that will comprise a representative sample in the Central Business District. In addition, Holmes will provide the commission with information on international best practices in earthquake design and construction. MacRae is undertaking a comparison of New Zealand standards used in the design of buildings for earthquake forces and material standards for reinforced concrete and structural steel buildings. The report should enable engineers and owners to identify potential weaknesses in buildings designed to previous standards.

For more information, visit <http://canterbury.royalcommission.govt.nz/Media-release---Technical-reports-being-prepared>.

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### Lifetime Achievement Medal for Akira Wada



Akira Wada

EERI member Akira Wada, professor emeritus at the Tokyo Institute of Technology, has been selected to receive this year's Fazlur R. Khan Lifetime Achievement Medal by the Council on Tall Buildings and Urban Habitat (CTBUH), in recognition of his work towards the advancement and safety of tall buildings in seismically active regions of the world. The award will be conferred at the CTBUH 10th Annual Awards Ceremony & Dinner, to be held November 3rd at the Illinois Institute of Technology in Chicago. Wada will give a talk on "Seismic Design and Structural Engineering: Implications for our World Today," in which

he will share some of the innovations he has developed in seismic design. Wada is chair of the CTBUH Japan Chapter and was recently named president of the Architectural Institute of Japan.

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### Publication

#### ***Ductile Design of Steel Structures***

Published recently by McGraw-Hill Professional, the 2<sup>nd</sup> edition of *Ductile Design of Steel Structures* reflects the latest plastic design and seismic design provisions and standards of the American Institute of Steel Construction (AISC) and the Canadian Standard Association (CSA).

Authored by EERI members Michel Bruneau, Chia-Ming Uang, and Rafael Sabelli, the book covers steel material, cross-section, component, and system response for applications in plastic and seismic design, and provides practical guidance on how to incorporate these principles into structural design. Three new chapters address buckling-restrained braced frame design, steel plate shear wall design, and hysteretic energy dissipating systems and design strategies. Eight

## Announcement

### Khan Lecture Series Additions

The lecture in the Fazlur Rahman Khan Distinguished Lecture Series by **Masayoshi Nakashima**, professor at Kyoto University in Japan, originally scheduled for March, has been rescheduled for Friday, September 23, 2011, at 4:10 p.m. in the Sinclair Lab Auditorium at Lehigh University in Bethlehem, Pennsylvania. Nakashima, who is also affiliated with the Disaster Prevention Research Institute and E-Defense at the National Research Institute for Earth Science and Disaster Prevention, had been unable to come in March because of the earthquake and tsunami in Japan. The topic of his lecture is "Safeguarding Quality of Life: the Role of Large-Scale Testing."

A fourth lecture has been added to the series to be given by **David Billington**, professor emeritus of civil and environmental engineering at Princeton University in New Jersey. It will take place at 4:30 p.m. on Friday, September 9, in Princeton's Friend Center Auditorium 101. The lecture will be on the topic "Personal and Professional Recollections of Fazlur Khan." A reception and exhibit honoring Khan will follow.

The series, sponsored by Lehigh's Department of Civil & Environmental Engineering and the Department of Art & Architecture, honors Khan's legacy of excellence in structural engineering and architecture. For additional information, visit <http://www.lehigh.edu/frkseries>.

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other chapters have been extensively revised and expanded, including a chapter presenting the basic seismic design philosophy to determine seismic loads. Self-study problems at the end of each chapter help reinforce the concepts presented.

The book is available for \$96 from [Amazon.com](http://Amazon.com).

## CALENDAR

The issues containing the first and subsequent appearances are indicated at the entry's end. Items listed for the first time are shown in bold.

### 2011

#### SEPTEMBER

7-9. 8th Int'l Conf on EQ-Resistant Engineering Structures (ERES 2011), Chianciano Terme, Italy. <http://www.wessex.ac.uk/eres2011news5.htm> (5/11)

**9. Khan Distinguished Lecture**, Princeton University. See page 6. (9/11)

13-14. Workshop on the Resiliency of the National Building Inventory, Los Angeles, CA. [www.nibs.org/index.php/irdp](http://www.nibs.org/index.php/irdp) (8/11)

**14. Remote Sensing Symposium**, Stanford University. See page 4. (9/11)

**15-16. 9th Int'l Workshop on Remote Sensing for Disaster Response**, Stanford University. See page 4. (9/11)

17-18. Int'l Symp. on Disaster Simulation and Structural Safety, Kobe, Japan. <http://www.u-hyogo.ac.jp/sim/events/ds11/> (6/11).

18-23. 1st Int'l Conf. on EQs & Structures (ICEAS-2011), Seoul, S. Korea. [www.aseem11.cti3.com/](http://www.aseem11.cti3.com/) (12/10, 1/11)

19-24. AEG Annual Meeting, Anchorage Alaska. [www.aegweb.org](http://www.aegweb.org) (5/11)

21-24. SEAOC Convention, Las Vegas, NV. [convention.seaoc.org/](http://convention.seaoc.org/) (2/11, 8/11)

**23. Khan Distinguished Lecture** Lehigh University, Bethlehem, PA. See page 6. (9/11)

25-29. Dam Safety 2011, Washington, D.C. [www.damsafety.org/](http://www.damsafety.org/) (4/11)

30-Oct. 1. PEER Annual Mtg., Berkeley, CA. [http://peer.berkeley.edu/events/annual\\_meeting/2011AM/](http://peer.berkeley.edu/events/annual_meeting/2011AM/) (8/11)

#### OCTOBER

2-6. 7th World Cong. Joints, Bearings, & Seis. Sys./Conc. Structs., Las Vegas, NV. [www.ijbrc.org/](http://www.ijbrc.org/) (8/10)

**10-11. Workshop on Advances in Real-Time Hybrid Simulation**,

Lehigh NEES facility. See page 5. (9/11)

10-12. CTBUH 2011, Seoul, S. Korea. <http://www.ctbuh2011.org/ctbuh/ctbuh.asp> (3/11)

11-14. Turkish EQ Eng./Seis. Conf., Ankara. [www.tdmd.org.tr](http://www.tdmd.org.tr) (3/11)

18-21. Deep Foundations Inst. (DFI) Annual Conference, Boston, MA. [www.dfi.org/conferencedetail.asp?id=172](http://www.dfi.org/conferencedetail.asp?id=172). See this page. (12/10, 2/11 8/11, 9/11)

27-28. EERI Seminar on the Seismic Design and Performance of Non-structural Elements, San Francisco, CA and Seattle, WA. See page 1. (8/11, 9/11)

#### NOVEMBER

3-4. EERI Seminar on the Seismic Design and Performance of Non-structural Elements, Los Angeles and San Diego, CA. See page 1. (8/11, 9/11)

#### DECEMBER

1-3. Int'l Conf. on EQ Analysis & Design of Structures, Coimbatore, India. <http://www.psgtech.edu/eqads2011/> (6/11)

**6-7. Geotechnical Short Course**, Virginia Tech, Blacksburg, VA. See page 4. (9/11)

11-15. 5th Int'l Conf. Structural Health Monitoring of Intelligent Infrastructure (SHMII-5), Cancun, Mexico. [www.shmii.unam.mx](http://www.shmii.unam.mx) (4/11)

#### 2012

##### JANUARY

9-11. Behavior of Steel Structures in Seismic Areas (STESSA 2012), Santiago, Chile. [www.ingcivil.uchile.cl/stessa2012](http://www.ingcivil.uchile.cl/stessa2012) (11/10)

##### FEBRUARY

15-18. 4th Int'l Conf. Grout/Deep Mix, New Orleans, LA. [www.dfi.org/conferencedetail.asp?id=163](http://www.dfi.org/conferencedetail.asp?id=163) (5/10)

##### MARCH

3-4. Int'l Symposium One Year after the 2011 Eastern Japan Earthquake, Kenchiku-kaikan Hall, Tokyo. Info: [kawashima.k.ae@m.titech.ac.jp](mailto:kawashima.k.ae@m.titech.ac.jp) (8/11)

##### APRIL

10-14. EERI Annual Meeting/Nat'l EQ Conf., Memphis, TN. [www.eeri.org](http://www.eeri.org).

org. See page 8. (5/11, 9/11)

#### MAY

**18-21. International Conference on Earthquake Engineering: Research Challenges**, Harbin, China. See page 4. (9/11)

28-30. 2nd Int'l Conf. PBD in EQ Geotech Eng., Taormina, Italy. <http://addon.webforum.com/issmg/view.asp?EventID=2160> (5/11)

#### JULY

8-12. 6th Int'l Conf. on Bridge Maintenance, Safety and Management (IABMAS 2012), Lake Como, Italy. [www.iabmas2012.org](http://www.iabmas2012.org) (12/10, 1/11)

#### SEPTEMBER

24-28. 15th World Conf. on EQ Eng. (15WCEE), Lisbon, Portugal. [www.15wcee.org](http://www.15wcee.org) (8/10)

#### OCTOBER

3-6. Symp. on Life-Cycle Civil Eng. (IALCCE), Vienna, Austria. [www.ialcce2012.org](http://www.ialcce2012.org) (12/10, 1/11)

## Announcement

### DFI Program

The program for the 36th Annual Conference on Deep Foundations, scheduled for October 18-21, 2011, in Boston, Massachusetts, includes two concurrent short courses on October 18, for which attendees will receive a certificate verifying professional development hours. Their topics are (1) Importance of Testing and Inspection for Deep Foundations and (2) Slope Stabilization with Deep Foundation Elements.

Following are the topics of the four technical sessions taking place October 19-21: Applying Novel Alternatives: New and Old; Unique Solutions for Construction in Constrained Urban Areas; Advancements in Deep Foundation Design and Construction; and Case Histories in Infrastructure Applications.

To register online, visit [www.deepfoundations2011.org](http://www.deepfoundations2011.org). EERI is a cooperating organization for the conference.



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## News of the Institute

### 2012 Board Nominees

The 2012 EERI Nominating Committee has submitted a slate of candidates for president-elect and the two director positions that will become open when Past President Farzad Naeim and directors Bill Anderson and Reginald DesRoches complete their terms next January. The nominees are:

**For President-Elect:** Ian Buckle, professor, Dept. of Civil & Environmental Engineering, University of Nevada, Reno.

#### For Director A:

- Jerome Hajjar, professor and chair, Dept. of Civil & Environmental Engineering, Northeastern University, Boston, Massachusetts;
- Roberto Leon, professor, School of Civil & Environmental Engineering, Georgia Institute of Technology.

#### For Director B:

- Lucy Arendt, associate professor of management, Austin E. Cofrin School of Business, University of Wisconsin, Green Bay;
- Kathleen Tierney, director, Natural Hazards Center, University of Colorado, Boulder.

Additional nominations may be made by the membership in accordance with Article VII of the EERI Bylaws (Sections 4 and 5), upon submission of a petition with signatures of 25 members. Petitions must be received before November 1. Biographies of the candidates and short vision statements will be published in a future issue of the *Newsletter* and posted on the EERI web site, [www.eeri.org](http://www.eeri.org).

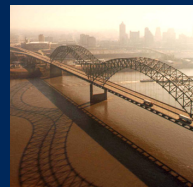
EERI wishes to thank the Nominating Committee: Jack Moehle (chair), William Anderson, Marshall Lew, Ronald Mayes, and Sharon Wood.

## 2012 EERI Annual Meeting & National Earthquake Conference

**"Learning from the Past to Protect the Future"**  
**Save the Date: April 10-14, 2012, Memphis, Tennessee**

Join us at the anchoring event of the New Madrid Bicentennial — engineers, scientists, emergency managers, social scientists, and policy makers.

- Learn the many lessons from recent and historic earthquakes and how to apply them to reduce future impacts and build resiliency.
- Look into the vulnerability of aging large infrastructure.
- Exchange key information on tools for earthquake risk reduction.
- Learn from successful earthquake mitigation and response programs in the public and private sectors.
- Get the latest information on seismic safety improvements for our schools.
- And much more!



Co-organizers:



Check [eeri.org](http://eeri.org) for more information and updates



[www.earthquakeconference.org/](http://www.earthquakeconference.org/)