

## EARTHQUAKE ENGINEERING RESEARCH INSTITUTE NEWSLETTER

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### EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

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### News of the Institute

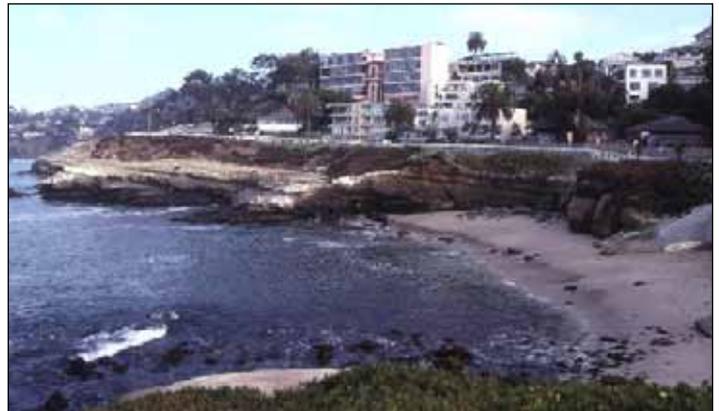
## Now is the Time: Register for Annual Meeting!

The 2011 EERI Annual Meeting kicks off Wednesday, February 9, 2011, at the Hyatt Regency La Jolla, north of San Diego, California, with the theme of "Earthquakes without Borders." EERI members should have received brochures in the mail by now. If you have not yet perused it, now is the time! You will find interesting sessions of direct relevance to you, plus other sessions indirectly related to your field that will broaden your perspective.

The brochure can be viewed and downloaded from <http://www.eeri.org/registration/am.php>, where you can also register and find everything else you need to know about the meeting, such as a link to make hotel reservations for the EERI group rate of \$179/single or double. The early registration deadline is January 14, which will save you \$50. Make your hotel reservations by January 8 to help EERI fill its room block! Take action now — this meeting will be the place to be!

### *Subscribing Member Sponsorship Opportunities*

In addition to FEMA, EERI thanks the following Subscribing Members that are co-sponsoring the Annual Undergraduate Student Design Competition during the Annual Meeting: Computers and Structures, Degenkolb Engineers, Kinematics, the Pacific Earthquake Engineering Research Center, and Tobolski/Watkins Engineering. There are many other sponsorship opportunities! Thanks go to Micro-G Lacoste for sponsoring a coffee break. Subscribing Members who are interested in fully or partially sponsoring one of the following events should contact Sonya Hollenbeck ([sonya@eeri.org](mailto:sonya@eeri.org)): the banquet, one of three luncheons, one of two poster sessions, the Meet the Mentors Reception, or one of the remaining three coffee breaks.



*La Jolla shoreline (photo: Tom Fields).*

## Deadline Extended for Spectra Chile EQ Issue

The submission deadline for *Earthquake Spectra's* special issue on the February 2010 Chile Earthquake has been extended to **March 15, 2011**. David Frost will be joining Jack Moehle as co-guest editor for this issue.

Papers are invited on the earth science, engineering, and social and economic sciences aspects of the earthquake and its aftermath. All papers should be submitted online through the *Earthquake Spectra* manuscript submission web page: <http://eqs.peerx-press.org>. When the manuscript is uploaded, authors must select "Chile Earthquake" from the drop-down list for special issues.

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## News of the Institute

### EERI Student Chapter Activities

Many EERI Student Chapters engaged in a full schedule of activities during the 2009-10 academic year, including technical sessions, social events, seminar series, and hosting EERI Distinguished Lecturers and Visiting Professionals. Described below are some of their creative and challenging outreach and organizational efforts.

#### **Georgia Inst. of Technology**

As part of a program at the Georgia Tech campus called BEAT the Traffic geared for high school technology/engineering and science teachers, EERI Chapter President Karthik Ramanathan and Webmaster Timothy Wright gave presentations about fundamental mechanics, introduction to bridge engineering, and opportunities within engineering, with numerous demonstrations.

During a week-long Technology, Engineering & Computing (TEC)

Camp for middle school girls on campus sponsored by Women in Engineering, chapter members Jazalyn Dukes and Niiki Fanouraki developed activities for the girls based on civil engineering topics, including a tour in the structural lab. Through the participation of over 15 EERI members and other volunteers, the girls learned fundamentals in structural design for loads, transportation problem solving, earthquake design principles, and geotechnical design principles.

The chapter was invited to give a

presentation to the ACE (Architecture, Construction, and Engineering) Atlanta Mentor Program and to arrange a day-long activity at Skanska USA Building, Inc. It involved a large number of the chapter volunteers in a bridge design competition using the WestPoint bridge design software.

Chapter members disseminated awareness about earthquakes and their mitigation at the annual Scout Day hosted by the Fernbank Museum of Natural History. Included were several well-received demonstrations on the shake table of the structural performance of a model building.

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*Georgia Tech student chapter members at the Skanska outreach activity.*

### Visiting Professionals at Student Chapters

EERI sponsors the Friedman Family Visiting Professional Program that matches visiting professionals with host universities for one or two days, bringing together the academic and professional sides of earthquake engineering and providing students with a practicing engineer's perspective on a wide range of topics and unique glimpses at what their futures may hold. The visits offer opportunities for one or more formal presenta-

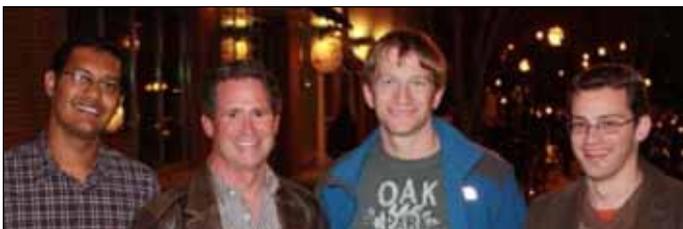
tions on current topics related to earthquake engineering and risk reduction, given to audiences of undergraduates, graduate students, faculty, and practitioners.

Guided tours of campuses and experimental installations are usually part of the visits, and informal gatherings also take place in a roundtable format or at meals with faculty and students, often involving the visitors offering observations on research projects underway at the schools.

The following speakers and topics were among visits over the past year that took place as part of the Visiting Professional Program:

- David Cocke of Structural Focus in Gardena, California, at Georgia Tech: "Reinforced Concrete Design" and "The Structure of Historic Buildings."
- David Friedman of Forell/Elsesser Engineers in San Francisco at the University of Southern California: "Three Unique Structural

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*David Cocke (2nd from left) at dinner with Georgia Tech students.*



*David Friedman at USC.*

## Student Chapter Activities

*continued from page 2*

### University at Buffalo (UB)

While the majority of the members of the EERI Student Chapter at the University at Buffalo (UB-EERI), State University of New York, are graduate students in the Department of Civil, Structural and Environmental Engineering (CSEE), it is truly multidisciplinary in also having members from the fields of economics, education, the biomedical sciences, and biological engineering. UB-EERI, CSEE-GSA (Graduate Student Association), and MCEER work together on a number of activities, including the hosting of a semi-

nar series.

The UB-EERI chapter also helped organize and participated in the CSEE Annual Graduate Poster Competition. For more information, visit the chapter's web site <http://gsa.buffalo.edu/eeri/>.

### University of British Columbia (UBC)

The chapter continued its tradition of performing demonstrations for the younger community about how buildings respond in earthquakes at the all-day Engineering Festival at Vancouver's Public Library. The student chapter's booth was the attraction of the E-fest, with kids and their parents building one- and two story

models out of straws, plasticine, and cardboard cutouts and having their engineering aptitude tested with a mini shaketable.

The UBC chapter also organized and hosted the 2nd Annual Earthquake Engineering Symposium with the support of the UBC Earthquake Engineering Research Facility (EERF) and the Department of Civil Engineering. Delegates from Tongji University, China, and the Universidad Nacional Autónoma de México (UNAM) gathered at UBC for a series of technical sessions and social events. Following the symposium, participants plan to collaborate on evaluating their recent seismic retrofit guidelines and raising earthquake awareness in their communities. The next symposium will take place in 2011 at Tongji University in Shanghai.

For more information, visit the chapter's web site <http://sites.google.com/site/ubceerichapter/>.

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*Sharon Wood (front row, 4th from right) at the University at Buffalo with attendees from her Distinguished Lecture.*

## Visiting Professionals

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Engineering Projects in Northern California by Forell/Elsesser.”

- John Hooper of Magnusson Klemencic Associates in Seattle, Washington, at the University at Buffalo and the University of Southern California: “Project-Directed Physical Testing: Its Importance in Delivering Better Seismic Performance.”
- Stephanie King of Weidlinger Associates in Mountain View, California, at the University of Michigan: “Infrastructure Risk

Assessment for Cost-Effective Mitigation Decisions.”

- Joe Maffei of Rutherford & Chekene in San Francisco, California, at the University of British Columbia: “Earthquake Damage and Seismic Retrofit of Concrete Buildings.”
- Farzad Naeim of John A. Martin & Associates at the University of California Irvine: “Structural Engineering of Landmark Projects.”
- Chris Poland of Degenkolb Engineers in San Francisco at San Jose State University: “Building Disaster-Resilient Communities.”

For information about hosting or becoming a Visiting Professional, go to <http://www.eeri.org/site/projects/friedman-visiting-professionals>.

## New Student Chapter at Penn State

EERI is pleased to announce that a new EERI student chapter was recently established at Pennsylvania State University (EERI-PSU) in University Park. Its faculty advisor is Gordon Warn, assistant professor in the Department of Civil and Environmental Engineering, and its local contact is Carlos Coronado of Bechtel Power Corporation. EERI-PSU is comprised of both undergraduate and graduate students, and intends to bring together students majoring in engineering, economics, and sociology to improve their understanding of the interdisciplinary effects of earthquakes on communities.



*John Hooper (center) at the University at Buffalo.*



Participants in the symposium organized by the UBC EERI student chapter.



2<sup>nd</sup> grade students who participated in Bridge Day, with their instructors from the UM EERI student chapter.

## Student Chapter Activities

*continued from page 3*

### University of Michigan (UM)

The University of Michigan (UM) EERI Student Chapter organized the one-day 3<sup>rd</sup> Annual Civil and Environmental Engineering Graduate Research Symposium to address the need for improved cross-disciplinary communication among the students in the CEE Department.

UM chapter members joined Professor Jason McCormick in teaching 2<sup>nd</sup> grade students about bridges and buildings at Bates Elementary School in Dexter, Michigan. After watching a video, the 2<sup>nd</sup> graders had fun seeing who could build the most expensive, the lightest, and the coolest-looking bridges on the computer using West Point Bridge Designer Software.

Throughout the year, chapter members conducted tours of the UM Structures and Geotechnical Engineering laboratories for students ranging from age 5 through high school.

### University of Southern California (USC)

The USC chapter is the first EERI student chapter associated with the Southern California Earthquake Center (SCEC). The objective of the EERI-SCEC USC Chapter is to promote the study and practice of earthquake engineering, science, planning and policy, by improving interdisciplinary communication and raising community awareness.

The chapter members who were part of USC's first-ever team at the annual Undergraduate Seismic Design Competition (during the 2010 EERI Annual Meeting) made a video that includes construction and the structure being tested, accessible on YouTube at <http://www.youtube.com/watch?v=QGdYgKaBSoc>.

The chapter co-sponsored two briefings over the past year, the first in cooperation with EERI's Southern California (regional) Chapter on Lessons from the 2009 Samoa and Indonesia Earthquake and Tsunami, and the second in cooperation with the Los Angeles Tall Building Structural Design Council on the Chile earthquake.

### University of Texas (UT)

At Explore UT, a campus-wide open house that attracts the general public (especially primary, middle, and high school students), the EERI Student Chapter introduced the concepts of seismic design to the students through the construction



UT student chapter member helps a young engineer at Explore UT.

of buildings using tooth picks (for members) and marshmallows (for joints). The buildings were then tested on a small shaking table powered by an electric drill. The chapter members improved the shaking table by using the roller system from cabinet drawers. They also put together a set of posters describing earthquakes, earthquake safety, geotechnical seismic hazards, historical earthquake damage, and how earthquakes affect buildings.

### Washington University, St. Louis

The EERI Student Chapter at Washington University participated in a display of the effects of earthquakes at the St. Louis County Child Safety Day, sponsored by State Farm Insurance Company. A shake table model was specially constructed for the event, which also included a video of a full-scale test of a plywood building at E-Defense in Japan.



Shake table demo by Washington U student chapter members.

## News of the Profession

### Participate in California Post-EQ Clearinghouse

The California Post-Earthquake Clearinghouse will provide a location, real or virtual, after a damaging earthquake, where professionals who arrive in the affected area can become part of a larger, temporary organization that facilitates the gathering of information, maximizes its availability, and better uses the talents of those present. The clearinghouse is presently made up of representatives of government agencies, private institutions, and universities that will be active in its operation. Current participants are inviting any-

one from anywhere in the state with an interest in the clearinghouse to attend future meetings, including researchers, academics, emergency managers, engineers, geologists, social scientists, those interested in helping collect data following a quake, and those who will be using data collected after a quake. You are welcome to become an active member of the clearinghouse as a whole as well as join any of three subcommittees (IT, Outreach, and Overflight). Learn about how your organization can participate and

benefit from this clearinghouse.

For more information on the clearinghouse, visit <http://www.eqclearinghouse.org/CA/>. To download USGS Circular 1242, "The Plan to Coordinate NEHRP Post-Earthquake Investigations," visit <http://geopubs.wr.usgs.gov/circular/c1242/c1242.pdf>.

The next clearinghouse meeting will be held 10 a.m. to 3 p.m. on April 7, 2011, in the President's Board Room at Caltech. If you are interested in attending, contact Marjorie Greene, [mgreene@eeri.org](mailto:mgreene@eeri.org). Information about how to access a webcast of the meeting will be posted on the web site soon.

### MCEER's Haiti Seminar Series

The third in a series of earthquake engineering seminars presented by Haiti's Quisqueya University (UniQ) and the University at Buffalo's MCEER (an EERI Subscribing Member) offers six programs that provide in-depth instruction on seismic design practices. Based on Haitian construction practices, programs include lectures, hands-on exercises, design examples and in-field demonstrations. Seminars will be held March 12-21, 2011, at UniQ in Port-au-Prince. All lectures and seminar materials are presented in French.

Seminars provide participants opportunities to earn credits that can be applied toward a future master's degree. Certificates of completion are awarded to all Introductory Program participants. Advanced Program participants who earn a passing grade on the technical exam receive a certificate of completion of training.

Seminar topics include introduction to earthquake engineering and post-earthquake building assessment; seismic design load calculations in Haiti; seismic design of concrete, confined masonry, and wood buildings in Haiti; and properties and

quality control of materials for the construction of earthquake-resistant reinforced concrete and masonry buildings in Haiti.

Instructors are André Filiatrault (M.EERI) of MCEER, Wassim M. Ghannoum (M.EERI) of the University of Texas at Austin, Pierre

Fouché, a Ph.D. candidate at the University at Buffalo, and J. Eric Karsh of Equilibrium Consulting in Vancouver, Canada.

For more information and to register, visit: <http://mceer.buffalo.edu/education/UniQ/>.

### Build Change Workshops in Haiti

With funding from USAID's Office of U.S. Foreign Disaster Assistance, EERI member Elizabeth Hausler's nonprofit organization Build Change has provided basic training on hurricane and earthquake-resistant construction to 700 homeowners in Haiti. Additionally, more than 290 Haitian builders have joined a three-day builders training workshop organized by Build Change, which has also developed simple messages and technical resources for safe reconstruction to be distributed beginning on the first anniversary of the earthquake, January 12, 2011.

In 2011, Build Change will expand its programs to provide hands-on technical assistance and training during reconstruction to at least 2,400 families. In partnership with Haitian training schools, a vocational program will aim at building the skills of 2,000 Haitian workers and placing them in much-needed apprenticeships and reconstruction jobs. Build Change will continue to work in partnership with the Ministry of Public Works to develop simple yet cost effective standards for rebuilding safe homes. For more information, visit <http://www.buildchange.org/>.

### Call for Abstracts SSA Annual Meeting

The 2011 Annual Meeting of the Seismological Society of America will be held April 13-15 in Memphis, TN.

The deadline is 5 p.m. PST January 11, 2011, for authors to submit abstracts not to exceed 2,000 characters through a secure Web server accessible from [www.seismosoc.org/meetings/2011/index.php](http://www.seismosoc.org/meetings/2011/index.php).

## News of the Membership

### Presidential Award for Lynch

EERI member Jerome P. Lynch, associate professor in the Department of Civil and Environmental Engineering at the University of Michigan, was among 85 scientists and engineers who recently received the 2010 Presidential Early Career Award for Scientists and Engineers (PECASE). He was recognized for pioneering bio-inspired sensors research for health and safety monitoring of civil infrastructures and for exemplary educational initiatives in motivating Detroit inner-city students to pursue engineering careers.



Jerome P. Lynch

Nominations for the PECASE award are submitted by ten participating federal agencies and departments whose missions have strong science and technology components. Lynch was nominated by the National Science Foundation. Each winner receives a citation, a plaque, and funding from their agency for up to five years to advance his or her research.

President Barack Obama attended and spoke at the PECASE award ceremony and reception, which took place on December 13, 2010, in Washington, D.C. The award winners spent about an hour at the White House.

The PECASE awards, established by President Clinton in 1996, are coordinated by the Office of Science and Technology Policy. Awardees are selected for their pursuit of innovative research and their commitment to community service. The awards increase awareness of careers in science and engineering, give recognition to the scientific missions of participating agencies, enhance connections between fundamental research and national goals, and highlight the importance of science and technology for the nation's future.

For more information on the PECASE Award, visit [http://www.er.doe.gov/accomplishments\\_awards/pecase/pecase.htm](http://www.er.doe.gov/accomplishments_awards/pecase/pecase.htm). For more information on Lynch and his research, visit <http://www.cee.umich.edu/Jerome+Peter+Lynch>. He was the 2008 recipient of EERI's Shah Family Innovation Prize.

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### Chile EQ Issue of *Spectra*

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The cover letter accompanying your manuscript should clearly indicate that the paper is being submitted for review and possible publication in this special issue. All papers to be reviewed must be received by March 15, 2011. We expect to have preliminary review decisions by **August 15, 2011**, and revised papers accepted for publication by **January 15, 2012**. The special volume should appear in print in **June 2012**. Papers without a clear link to the Chile earthquake or not complying with *Earthquake Spectra's* instructions to authors will not be reviewed for this issue.

Questions regarding paper content or submission procedures should be directed to the guest editors for the special volume, Jack Moehle ([moehle@berkeley.edu](mailto:moehle@berkeley.edu)) and David Frost ([dfrost@ce.gatech.edu](mailto:dfrost@ce.gatech.edu)). Prospective authors are strongly encouraged to send abstracts of their articles by email to the guest editors prior to formal manuscript submission so that the suitability of the paper topic for the special issue can be evaluated.

### USDOI Honor for Borchardt



Roger D. Borchardt

EERI member Roger D. Borchardt, a seismologist with the U.S. Geological Survey, has been awarded the highest honor of the U.S. Department of Interior (DOI), the Distinguished Service Award. Borchardt was recognized for his "exceptional scientific contributions in the fields of seismology and engineering seismology, extraordinarily broad in scope," including contributions to the theory for seismic wave propagation in anelastic media, the understanding of site response and its quantification using shear velocity dependent site factors for use in building codes and seismic hazard analyses, the pioneering development of patented digital seismic instrumentation, and scientific and engineering leadership.

Borchardt, also a past recipient of the Meritorious Service Award of the DOI, has held numerous leadership positions with the USGS, has vigorously promoted the development of strong-motion data acquisition, is co-inventor of the patented General Earthquake Observation System, and the author of 200 publications, the most recent of which is a graduate level textbook on the theory of wave propagation in layered viscoelastic media. An honorary member of EERI, Borchardt has served as the Institute's vice president, as editor of *Earthquake Spectra*, and as a member of numerous committees.

## Job Opportunities

### BART Seeks Senior Engineers

The San Francisco Bay Area Rapid Transit District (BART) (an EERI Subscribing Member) invites applications for senior structural engineers whose responsibilities include design and construction project duties, performing structural and seismic engineering analysis, acting as resident engineer on assigned projects, and exercising supervisory skills. Salary commensurate with qualifications and experience.

For more information and to apply, visit [www.bart.gov](http://www.bart.gov) (job ID # 2204). The application deadline is February 4, 2011. BART is an equal opportunity employer. Women, minorities, and persons with disabilities are encouraged to apply.

## Openings at UCSD

The Jacobs School of Engineering at the University of California San Diego ([www.jacobsschool.ucsd.edu](http://www.jacobsschool.ucsd.edu)) is currently recruiting assistant, associate (preferred), or full professors for several tenure and tenure-track faculty positions (job # 10-172-AD). Review of applications began October 1, 2010, and will continue until positions are filled. Applicants will be considered with research backgrounds in any of the school's six engineering departments. In addition, preferred candidates will have demonstrated accomplishments in areas contributing to diversity, equity, and inclusion, such as programs that increase the access and success of underrepresented students or faculty in engineering. For more information and to apply, visit <http://academicaffairs.ucsd.edu/aps/adeo/recruitment/jsoe.html>.

## Calls for Papers

### IABMAS, IALCCE, ICEAS

**The 6th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2012)** will be held on Lake Como, Italy, July 8-12, 2012. The official language of the Conference will be English. Authors are invited to submit 300-word abstracts by February 28, 2011, through the online submission system (<http://www.iabmas2012.org>). Participants interested in organizing mini-symposia or special sessions are requested to submit proposals to the conference organizers by January 31st, 2011.

**The Third International Symposium on Life-Cycle Civil Engineering 2012** will be held in Vienna, Austria, October 3-6, 2012. Authors are invited to submit 300 word abstracts by May 31, 2011, through the online submission system ([www.ialcce2012.org](http://www.ialcce2012.org)). For participants interested in organizing mini-symposia or special sessions, proposal submission will be made available on the symposium website.

**The 1st International Conference on Earthquakes and Structures (ICEAS'11)** will be held as one of seven conferences comprising the First World Congress on Advances in Structural Engineering and Mechanics (ASEM'11plus), September 18-23, 2011, in Seoul, Korea. The conference coincides with the launching of the new international journal, *Earthquakes and Structures*. Authors are invited to submit abstracts of approximately 300 words by March 31, 2011, through the TeMUS (Techno-Press electronic manuscript upload system) (<http://www.technopress.org/conference>). Those who are interested in organizing a minisymposium should inquire with the congress secretariat. Mini symposium organizers will be provided with a reduced registration fee. For more information, visit <http://asem11.cti3.com/>.

## Announcements

### DHS Transportation Summit

The Fifth Annual University Network Summit DHS Science Conference, with the theme "Catastrophes & Complex Systems," will be held March 30-April 1, 2011, in Washington, D.C., sponsored by the Office of University Programs, Science and Technology Directorate, U.S. Department of Homeland Security (DHS). Through a series of interactive sessions, the summit will focus on the role of transportation systems in preventing, mitigating, responding to, and recovering from natural or manmade disasters, as well as strategies to ensure the function of transportation systems in a disaster, and the characteristics of transportation systems that enable response and recovery efforts. Those who should attend include researchers, program analysts, portfolio managers, public employees, first responders, and DHS operators. For more information and to register, visit <http://www.orau.gov/dhssummit/>.

### DHS Undergraduate Summer Internships

DHS is sponsoring a 10-week summer internship program for college juniors and seniors majoring in homeland security related science, technology, engineering, and mathematics (HS-STEM) disciplines. It will enable students to conduct research in DHS mission relevant research areas at federal research facilities located across the country. Each award consists of a stipend of \$500 each week (\$5,000 for 10 weeks) payable every two weeks, and transportation expenses for one round trip between the student's location and the assigned facility, with some limitations. U.S. citizenship is required. The application deadline is January 5, 2011. For more information and to apply, visit [www.orau.gov/dhsinternships](http://www.orau.gov/dhsinternships). DHS has partnered with Oak Ridge Institute for Science and Education to manage the application process.

## News of the Institute

# Summary of the Minutes of the Board of Directors Meeting of September 28, 2010

**Call to order:** President Farzad Naeim called the meeting to order at 8:35 a.m. Also present were Directors William Anderson, Marshall Lew, Joseph Maffei, Masayoshi Nakashima, Ellen Rathje, and Thomas Tobin, Executive Director Jay Berger, and Publications Manager Eloise Gilland. Directors Reginald DesRoches and Jack Moehle were unable to attend. Chris Rojahn and Jon Heintz of the Applied Technology Council as well as Bret Lizundia, ATC's liaison to EERI, joined the meeting early in the afternoon to discuss possible collaboration between ATC and EERI.

**Publications Sales Report:** Gilland summarized the 2010 Publication Sales Report for the second third of the year, showing total sales of \$18,148, compared to \$35,332 for the same period in 2009. Most of the decline is due to fewer sales of the 2008 monograph, *Soil Liquefaction During Earthquakes*.

**Membership Report:** The current Membership Report compiled by Juliane Lane shows 100 more members overall compared to last year at this time, with numbers of regular members down by 10, an increase in E-Student members of 110, and an increase in Young Professional members of 36.

**Energizing chapters:** Rathje said that for both regional and student chapters, the activity that attracts the most participants is hosting speakers. Finding speakers is not difficult for chapters on the west coast but elsewhere, it is more of a challenge. Tobin said EERI is not serving members if the membership is not growing. EERI will be stronger if there are more local meetings and events.

Naeim recommended contacting chapter leaders twice a year, both by phone and e-mail, to tell them what programs are available and to encourage them to ask for speakers. Tobin said similar contacts should be made with regional chapters too, to enable EERI members to be active in their communities.

**Attracting new members:** Maffei pointed out that currently, 70% of EERI members are structural engineers. Tobin said he was told that if he was serious about earthquake engineering, he should join EERI. Tobin said the Board needs to revisit the strategic plan and come up with a new strategy for the most crucial issue of membership growth. Maffei said membership benefits must be protected, defined, and disseminated.

**Liquefaction monograph issue:** The Board agreed that the report of the Ad Hoc Committee on Soil Liquefaction During Earthquakes, dated August 16, 2010, is of the highest quality. It recommended that a major liquefaction workshop be conducted under the auspices of the National Academies to consider the current state of knowledge and practice in liquefaction hazard evaluation.

**Ed Kavanzanjan call-in on NRC study:** Ed Kavanzanjan, chair of the National Research Council Committee on Geological and Geotechnical Engineering (COGGE), participated in the meeting by telephone. COGGE stands ready to work with EERI to implement its recommendation to organize a community-wide workshop that addresses current issues in the evaluation of soil liquefaction. Kavanzanjan reviewed the NRC process, which is seen as an impartial arbiter, designed to deal with unsettled and potentially controversial issues.

**NRC-EERI Workshop/Study on Liquefaction:** The Board expressed enthusiastic support for the Ad Hoc Committee's recommendations. COGGE can now begin work on securing funding for the NRC-EERI

Workshop/Study effort.

**Secretary/Treasurer's Report**  
Overview of revenue and expense reports: The original EERI budget for 2010 had projected a deficit of \$70,000, but it appears the year may end with a \$50,000 to \$70,000 surplus.

Investment report and overview: The combined balance sheet showed positive revenue for Association Programs of \$534,629 as of July 31, 2010. Adding this to the opening fund balance for Association Programs (January 1, 2010) of \$257,206 results in a total Fund Balance of \$791,835. Association Programs liabilities as of July 31, 2010, were \$174,158, resulting in total assets of \$965,993.

The Endowment Program's total assets on July 31, 2010, were \$1,450,534, an increase of \$5,092 over the total on December 1, 2009. The balance for the combined Association, Endowment and Technical Programs is \$2,416,527.

2011 Budget Introduction: Lew said the projected budget forecast for 2011 shows a deficit of \$180,000, assuming the same dues structure. The budget forecast does not include new funding for the Learning From Earthquakes program or for the Concrete Coalition project.

**EERI staffing and internship program:** Berger reported that two post-graduate interns, Ruben Negrete and Alice Ng, were selected in June and receive a small stipend for their volunteer efforts. They have helped with a variety of projects, including the 9USN/10CCEE and the Haiti and Chile workshops. Rachel Beebe, is doing well as the interim *Spectra* editorial assistant, replacing Liz Stalnaker during her maternity leave.

**Student Leadership Council — Student Chapters:** Berger reviewed the background of the Student Leadership Council. The SLC did an outstanding job at the 9USN/10CEE in Toronto in organizing a workshop for

young researchers, professionals, and faculty. Berger proposed merging EERI student chapters with the SLC. Scott Olson, chair of the Student Activities Committee, will write a short white paper on coordination of student chapter activities, with the intention of having a transition period for the next six months to a new model.

**Chile Research Needs Workshop:**

Berger reported that there were 44 attendees at the August 19, 2010, EERI Chile Research Needs Workshop at the National Science Foundation offices. It featured eight breakout sessions organized by discipline that focused on gaps in knowledge and research uncovered by the February 2010 earthquake. Workshop presentations are posted online on EERI's Chile clearinghouse site.

**Haiti RAPIDs and Research Needs Workshop:**

The two-day Haiti RAPIDs and Research Needs Workshop, scheduled for September 30-October 1, will focus on the recovery process and what kind of research will benefit the affected community. The RAPID grant awardees' project posters are now available to view and download courtesy of NEEShub and through the EERI Haiti clearinghouse site.

**New Zealand earthquake:** In collaborating with a number of other groups, EERI leveraged a small amount of supplemental LFE money to directly support a few team members and additional team members who received travel funding from other sources.

**EERI Activities in Haiti:** Greene reported that Wassim Ghannoum, one of the instructors at an MCEER seminar for Haitian engineers, gave an introductory presentation about EERI. Approximately 150 trainees signed up, expressing interest in an EERI chapter in Haiti. Gerard Jean Baptiste, who is semi-retired, had been active in an architectural engineering society in Haiti and is also interested in helping create and co-

ordinate an EERI chapter.

**China-US Symposium:** Berger reported that EERI submitted a proposal to NSF requesting travel support for 20 of the 23-member U.S. team to participate in the first "China/USA Symposium for the Advancement of Earthquake Sciences and Hazard Mitigation Practices," to be held October 19-21, 2010, in China.

**2012 National Earthquake Conference:** Berger said that the 2012 National Earthquake Conference has been scheduled for the third week of April. The NEC organizing committee, headed by Jim Wilkinson of CUSEC, needs input on what EERI wants for the EERI Annual Meeting portion of the conference. The Board formed a subcommittee consisting of Berger, Maffei, Naeim, and Tobin to develop ideas.

**NEES-EERI Webinar Series:** Berger is working with Thalia Anagnos on restarting the EERI-NEES Webinar series and examining opportunities for participants to receive CEU credits for attending and taking a short quiz.

**NEHRP Update:** Berger referred to the letter of September 15 from EERI to Senator Barbara Boxer, urging her to support the swift reauthorization of NEHRP via H.R. 3820. NEHRP reauthorization in the Senate is in limbo, as the community had not come together because of H.R. 3820's lower authorization levels for NIST and FEMA.

**LFE Program:** An ad hoc committee will be formed for the next Board meeting with the short mission of determining the scope of LFE and potential funders.

**Special Issues of *Spectra*:** The two special issues of *Spectra* on the Haiti and Chile earthquakes are well underway, but are as yet unfunded. EERI will approach the NEHRP agencies and international organizations such as the World Bank and UNESCO for financial support of these two very important publications.

**Bolt Medal:** The Board approved the Bolt Medal Nomination Panel's nominee for the Bolt Medal, Kojiro Irikura, professor emeritus at Kyoto University.

**EERI Distinguished Lecturer:**

The Board approved the Honors Committee's recommendation of Stephanie Chang as the 2011 EERI Distinguished Lecturer.

**TCLEE Workshop:** In his capacity as an officer of TCLEE, Reggie DesRoches e-mailed Berger on July 30 requesting permission for TCLEE to hold a workshop one day prior to the 2011 EERI Annual Meeting.

**Schools Committee Workshop:**

The chair of the Ad Hoc Committee on the Seismic Safety of Schools, Phil Gould, has requested permission for the committee to hold a half-day workshop on the day before or the afternoon after the 2011 EERI Annual Meeting adjourns. The purpose is to involve the EERI regional chapters in a pilot study to advocate for improved seismic safety in schools in their regions. The Board was enthusiastic about this workshop theme and approved funding for speakers who would not normally attend the Annual Meeting.

**2011 EERI Budget:** Lew said that although there is no foreseeable revenue that would make up a projected \$180,000 deficit, EERI does have reserves. The Board unanimously passed a motion not to increase dues because of the weak economy and because there was no deficit this year. It would be the third consecutive year of no increase. Tobin said the Board must be serious about increasing membership.

**Adjournment:** Naeim adjourned the meeting at 4:30 p.m.



## Publications

### NEHRP Technical Briefs # 3 & 4

The National Earthquake Hazards Reduction Program (NEHRP) has recently released two new technical briefs, authored primarily by EERI members, published by the National Institute of Standards and Technology (NIST), as aids to the efficient transfer of research into practice, with the goal of reducing the nation's losses from earthquakes.

**Seismic Design of Cast-in-Place Concrete Diaphragms, Chords, and Collectors: A Guide for Practicing Engineers**, NEHRP Seismic Design Technical Brief #3, was authored by Jack Moehle (University of California, Berkeley), John Hooper (Magnussen Klemencic Associates), Dominic Kelly (Simpson Gumpertz & Heger Inc.), and Thomas Meyer (Magnussen Klemencic Associates). This *Guide* was written for practicing structural engineers to assist in their understanding and application of code requirements for the design of cast-in-place concrete diaphragms (either conventionally reinforced or prestressed). However, many of the concepts that are presented apply equally to other diaphragm types. The material is presented in a sequence that practicing engineers have found useful, with general principles presented first, followed by detailed design requirements. To download Brief #3, visit <http://www.nehrp.gov/pdf/nistgcr10-917-4.pdf>.

**Nonlinear Structural Analysis for Seismic Design: A Guide for Practicing Engineers**, Brief #4, was authored by Gregory Deierlein (Stanford University), Andrei Reinhorn (University at Buffalo), and Michael R. Willford (Arup). This brief provides a summary of the important considerations to be addressed, based on the current capabilities of nonlinear analysis technologies and how they are being applied in practice. The scope includes both nonlinear static (pushover) and dynamic (response history) analyses, but with the emphasis on the latter. This *Guide* is intended to be consistent with building codes and standards; however, as the use of nonlinear analysis for design is still evolving, there are many areas where details of the implementation are open to judgment and alternative interpretations. While concerned primarily with buildings, the guidance can generally apply to nonlinear analysis of other types of structures. To download Brief #4, visit <http://www.nehrp.gov/pdf/nistgcr10-917-5.pdf>.

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### NEHRP Seismic Provisions for New Buildings

The Federal Emergency Management Agency (FEMA) has announced that the 2009 edition of the *NEHRP Recommended Seismic Provisions for New Buildings and Other Structures*, FEMA P-750 and FEMA P-750 CD, are now available, at no cost, from the Publications Warehouse and online from the FEMA Library.

In a series first published in 1985, the *2009 NEHRP Provisions* marks the seventh update of this key resource document. This new edition adopts by reference the national load standard, ASCE/SEI 7-05,

which allows the *Provisions* to resume its role as a research-to-practice resource for introducing new knowledge, innovative concepts, and design methods to improve the national seismic standards and codes.

The *2009 NEHRP Provisions* is presented in a new one-volume format with three parts: Provisions, Commentary, and Resource Papers. The accompanying CD (FEMA P-750 CD) contains the digital version of the *Provisions*, the USGS Seismic Design Maps, the *Provisions*-based design maps proposed to ASCE7-10 and 2012 I-codes, and other sup-

### PEER/ATC Tall Buildings Report

The Tall Buildings Initiative, coordinated by the Pacific Earthquake Engineering Research (PEER) Center, has released its Task 7 Report, "Modeling and acceptance criteria for seismic design and analysis of tall buildings." Available for download at [http://peer.berkeley.edu/tbi/publications\\_reports.html](http://peer.berkeley.edu/tbi/publications_reports.html), this report is jointly published by PEER and the Applied Technology Council as PEER/ATC 72-1.

The goal of this task was to develop practical guidance for nonlinear modeling of tall buildings (buildings that exceed 160 feet) constructed with reinforced concrete, steel, and composite construction. The project coordinated a workshop that identified critical issues in tall buildings modeling and acceptance values, gathered researcher/practitioner teams to review the literature, and conducted analyses to identify appropriate procedures.

This report represents a compilation of the latest available information on analytical simulation, system and component behavior, material properties, and recommendations specific to the seismic design of tall building structural systems.

PEER/ATC 72-1 is intended to serve as a resource document for the *Guidelines for Seismic Design of Tall Buildings*, which will be published in the near future by PEER.

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porting materials.

To place an order, call 1 (800) 480-2520 or fax your request to (240) 699-0525.

To view or download other NEHRP publications and products or to sign up for updates on earthquake risk mitigation publications, news, and events, visit <http://www.fema.gov/plan/prevent/earthquake/publications.shtm>.

## CALENDAR

The issue containing the first appearance is indicated at the entry's end. Items listed for the first time are shown in bold.

### 2011

#### JANUARY

4-7. NSF CMMI Engineering Research and Innovation Conference, Atlanta, Georgia. Includes NEEShub Workshop. Info: [http://www.nsf.gov/about/career\\_opps/vacancies/scientific.jsp](http://www.nsf.gov/about/career_opps/vacancies/scientific.jsp) (12/10)

10-13. 5th International Geotechnical Earthquake Engineering Conference (5-ICEGE), Santiago, Chile. Info: [www.5icege.cl](http://www.5icege.cl) (11/09)

14. NEES-EERI Webinar on Performance-Based Seismic Design of Mid-Rise Light-Frame Wood Buildings. Info: [www.nees.org](http://www.nees.org) (12/10)

26-28. 12th East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-12), Hong Kong. Info: [http://bccw.cityu.edu.hk/easec12/wp\\_special\\_session.asp](http://bccw.cityu.edu.hk/easec12/wp_special_session.asp) (5/10)

#### FEBRUARY

9-12. EERI Annual Meeting, La Jolla, CA. Info: [www.eeri.org/site/2011-annual-meeting](http://www.eeri.org/site/2011-annual-meeting). See page 1. (4/10, 9/10, 10/10, 11/10, 12/10, 1/11)

18. Khan Distinguished Lecture, Lehigh University, Bethlehem, PA. Info: See this page. (10/10, 1/11)

#### MARCH

25. Khan Distinguished Lecture, Lehigh University, Bethlehem, PA. Info: See this page. (10/10, 1/11)

30-April 1. DHS Science Conference on Transportation, Washington, D.C. Info: <http://www.orau.gov/dhssummit/>. See page 7. (12/10, 1/11)

#### APRIL

7. California Post-EQ Clearinghouse, Los Angeles, CA. See page 5. (1/11)

8. Khan Distinguished Lecture, Lehigh University, Bethlehem, PA. Info: See this page. (10/10, 1/11)

13-15. SSA Annual Meeting, Memphis Tennessee. Info: <http://www.seismosoc.org/meetings/2011/index.php>. See page 5. (12/10, 1/11)

29-30. BESS 2011, Pomona, CA. Info: [www.bessymposium.org](http://www.bessymposium.org) (11/10)

#### MAY

16-18. Sixth International Conference on Seismology and Earthquake Engineering (SEE6), Tehran, Iran. Info: [www.see6.ir](http://www.see6.ir) (8/10)

26-28. COMPDYN 2011: 3rd International Conference on Computational Methods in Structural Dynamics & Earthquake Engineering, Corfu, Greece. Info: <http://www.compdyn2011.org/> (10/10)

#### JUNE

26-28. GeoRisk 2011, Atlanta, GA. Info: [www.georisk2011.org](http://www.georisk2011.org) (8/10)

27-July 8. 25th International Union of Geodesy and Geophysics (IUGG) Assembly, Melbourne, Australia. Info: <http://www.iugg2011.com/> (6/09)

#### JULY

4-6. 8th European Conference on Structural Dynamics (EURODYN 2011), Leuven, Belgium. Info: [www.eurodyn2011.org](http://www.eurodyn2011.org) (6/10)

#### AUGUST

30-Sept. 1. 3rd International Workshop on Performance, Protection, & Strengthening of Structures under Extreme Loading (Protect 2011), Lugano, Switzerland. Info: [www.protect2011.supsi.ch](http://www.protect2011.supsi.ch) (8/10)

#### SEPTEMBER

18-23. 1st Int'l Conference on Earthquakes and Structures (ICEAS-2011), Seoul, S. Korea. Info: <http://asem11.cti3.com/>. See page 7. (12/10, 1/11)

#### OCTOBER

2-6. 7th World Congress on Joints, Bearings, & Seismic Systems for Concrete Structures, Las Vegas, NV. Info: [www.ijbrc.org/](http://www.ijbrc.org/) (8/10)

18-21. Deep Foundations Institute (DFI) Annual Conference, Boston, MA. Info: <http://www.dfi.org/conferencedetail.asp?id=172> (12/10)

### 2012

#### JANUARY

9-11. STESSA 2012, Santiago, Chile. Info: [www.ingcivil.uchile.cl/stessa2012](http://www.ingcivil.uchile.cl/stessa2012) (11/10)

#### FEBRUARY

15-18. 4th Int'l Conference on Grouting & Deep Mixing, New Orleans, LA. Info: [www.dfi.org/conference-detail.asp?id=163](http://www.dfi.org/conference-detail.asp?id=163) (5/10)

#### JULY

8-12. 6th Int'l Conference on Bridge Maintenance, Safety and Management (IABMAS 2012), Lake Como, Italy. Info: <http://www.iabmas2012.org>. See page 7. (12/10, 1/11)

#### SEPTEMBER

24-28. 15th World Conference on Earthquake Engineering (15WCEE), Lisbon, Portugal. Info: [www.15wcee.org](http://www.15wcee.org) (8/10)

#### OCTOBER

3-6. Symposium on Life-Cycle Civil Engineering (IALCCE), Vienna, Austria. Info: [www.ialcce2012.org](http://www.ialcce2012.org) See page 7. (12/10, 1/11)

## Announcement

### 2011 Khan Lectures

The following three Friday lectures in the 2011 Fazlur Rahman Khan Lecture Series all begin at 4:10 p.m. in the Sinclair Lab Auditorium at Lehigh University, Bethlehem, Pennsylvania: (1) February 18: **David Scott** of Arup, New York City, on "Extreme Engineering;" (2) March 25: **Masayoshi Nakashima**, professor, Kyoto University, Japan, on "Safeguarding Quality of Life: the Role of Large-Scale Testing;" (3) April 8: **Chris D. Poland**, chairman & CEO, Degenkolb Engineers, San Francisco, California, on "Building Disaster-Resilient Communities."

For additional information about the series, visit <http://www.lehigh.edu/frkseries>.



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EERI Newsletter, January 2011 Volume 45, Number 1

**News of the Institute**

**NRC Roundtable on Soil Liquefaction**

At its May 2010 meeting, the EERI Board of Directors established an ad hoc committee to provide advice regarding technical and monograph preparation issues associated with the EERI monograph (MNO 12) *Soil Liquefaction During Earthquakes*, authored by professors Ed Idriss and Ross Boulanger. The committee's report, submitted in August, can be downloaded from <http://www.eeri.org/site/news/latest-news/960-rpt-on-rvw-liquefaction-monograph>. Their report was accepted by the EERI Board at its September meeting. The Institute is deeply indebted to professors Tom O'Rourke (chair), Liam Finn, Steve Kramer, and Les Youd for their service on the committee. Their principal recommendation was "that EERI broaden the discussion and resolution of liquefac-

tion issues ... by promoting a major liquefaction workshop conducted under the auspices of the National Academies to consider the current state of knowledge and practice in liquefaction hazard evaluation."

The National Research Council (NRC) Committee on Geological and Geotechnical Engineering (COGGE) organized a half-day roundtable discussion on "Liquefaction Susceptibility Criteria" at its December 8, 2010, meeting. O'Rourke represented EERI's ad hoc committee at this meeting and summarized their report in an opening statement. Other speakers were Zia Zafir (M.EERI) of Kleinfelder, Ann Marie Kammerer (M.EERI) of the U.S. Nuclear Regulatory Commission (USNRC), and William Marcuson of the U.S. Army Corps

of Engineers (USACE) (emeritus). Their presentations were followed by a three-hour discussion of what should be included as part of an NRC study. A list of the 23 participants at the meeting is posted on the above-mentioned URL.

Next steps are for COGGE to draft a scope of work that will be refined through an iterative process, and NRC staff will then work with potential sponsors to develop a budget and secure the necessary funding for a 2011 workshop and study. Potential sponsors include the National Science Foundation, the USNRC, FEMA, the USACE, the Federal Energy Regulatory Commission, the National Institute of Standards and Technology, the U.S. Geological Survey, the Electric Power Research Institute, the Federal Highway Administration, the California Department of Water Resources, and Caltrans.

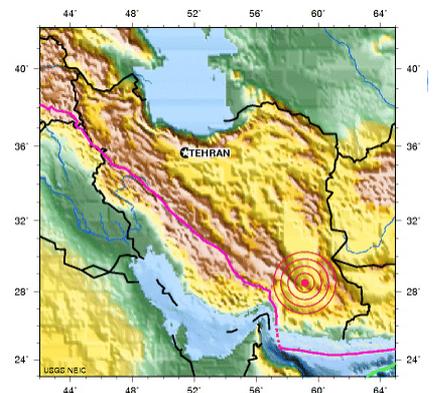
**Learning from Earthquakes**

**M6.5 Hosseinabad, Iran Earthquake**

A magnitude 6.5 earthquake struck in southeast Iran on December 20, 2010. The earthquake occurred at 10:11:59 P.M. local time (18:41:59 UTC) at 28.491°N, 59.117°E and at a depth of 11.8 km. The epicenter was about 100 km southeast of Bam, where a magnitude 6.6 earthquake killed 30,000 people on December 26, 2003, and destroyed an ancient citadel.

Rescue operations by national and local government agencies and the Red Crescent are continuing. As of December 22, 2010, eleven people have been reported killed, another 100 injured, and several thousand homes were damaged. Villagers built their homes from mud brick that turned to rubble and buried them during the earthquake. Rescue efforts were hampered by landslides, downed telephone poles, and blocked roads. This region (part of Kerman Province) is mountainous and sparsely populated, so casualties are expected to be much

smaller than occurred during the 2003 earthquake.



*Iran earthquake location.*