EARTHQUAKE ENGINEERING RESEARCH INSTITUTE
NEWSLETTER

Editor Mark Yashinsky
LFE Insert Editor Sarah Nathe
Associate Editor Gerald Brady
Editorial Assistant Eloise Gilland

Earthquake Engineering Research Institute
499 14th Street, Suite 320
Oakland, California 94612-1934
Phone: 510/451-0905
Fax: 510/451-5411
E-mail: eeri@eeri.org
Web site: http://www.eeri.org

ISSN 0270-8337

Learning from Earthquakes

Reconnaissance Teams Investigating Central Italy Earthquake

On April 6, 2009, an M6.3 earthquake occurred close to L'Aquila in central Italy, causing casualties in the hundreds, building damage, and ground failure. Teams of earthquake researchers, sponsored by EERI, the Pacific Earthquake Engineering Center (PEER), and the Geo-Engineering Earthquake Reconnaissance (GEER) Association, are coordinating with additional teams and researchers in the field to investigate and document scientific and engineering effects of the earthquake. Potential geo-engineering issues to explore include ground motion, site effects, landslides, seismic performance of earth dams, seismic compression of compacted earth fills, and possibly surface fault rupture. The region is well instrumented with ground motion stations that will quantify the characteristics of earthquake shaking for this M=6.3 normal fault event. It is anticipated that other important lessons will include the performance of masonry and concrete structures, the performance of historic monuments, the emergency response and management system, and the societal impacts.

The EERI/PEER team is headed by Paolo Bazzurro of AIR-Worldwide. Other team members include the following colleagues from both the U.S. and Italy: David Alexander (CESPRO/Universita di Firenze); Silvia Bruno (Consulting Structural Engineer); Paolo Clemente (ENEA Casaccia Research Centre); Mary Comerio, Filip Filippou, and Khalid Mosalam (PEER/University of California Berkeley); Adriano DeSortis and Agostino Goretti (National Seismic Survey, Italy), Mersedeh Jorjani (Architectural Conservator), Fabrizio Mollaioli

continued on page 3

News of the Institute

Straw Bale House Test Successful

In an earthquake simulation at the University of Nevado, Reno, on March 27, 2009, a straw bale house "performed exceptionally well," according to EERI member Darcey Donovan, CEO and founder of the nonprofit Pakistan Straw Bale and Appropriate Building (PAKSBAB). The test was supported by the EERI Endowment Fund and NEES (the Network for Earthquake Engineering Simulation). The input motion was the Canoga Park Topanga Canyon record of the 1994 Northridge, California, earthquake, Mw 6.7. The house survived 0.82g, twice the acceleration of the Canoga Park record. The house was subjected to a series of seven tests, beginning at 25% of the recorded ground acceleration and increasing at 25% increments until the house cracked

continued on page 4

Straw bale house ready for testing at UNR.

News of the Membership

George Housner

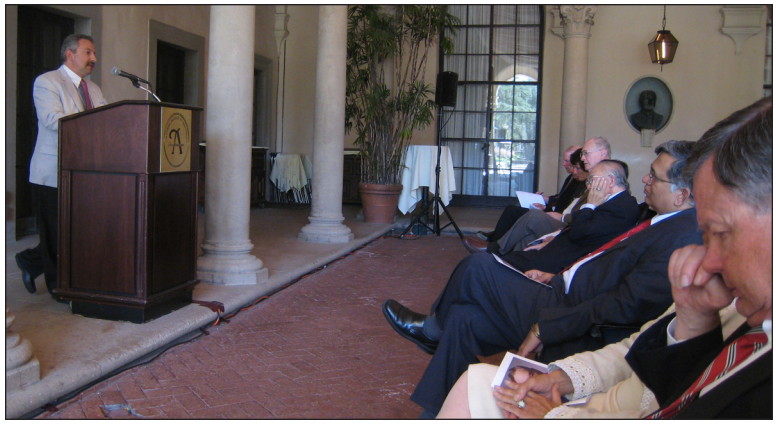
Housner Memorial Service

The Caltech Civil Engineering Department hosted a memorial gathering at the Athenaeum in Pasadena, California, on Saturday, April 18, to celebrate the life of EERI founder George W. Housner (1910-2008), Braun Professor Emeritus of Engineering, often recognized as the father of earthquake engineering (see his obituary on page 1 of the December 2008 *EERI Newsletter*).

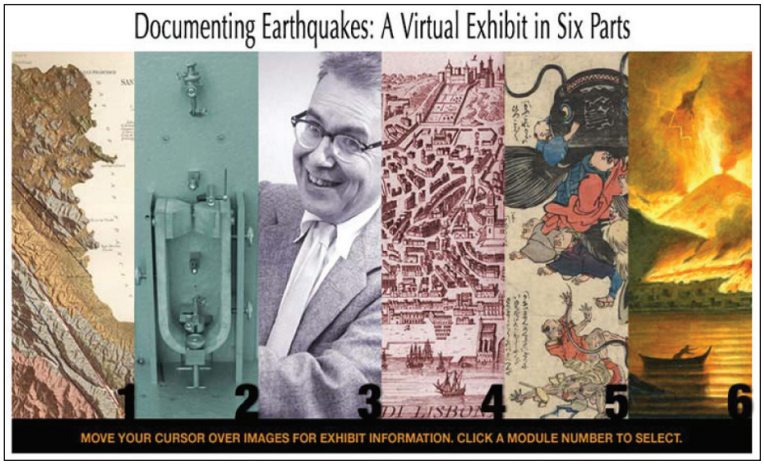
EERI President Farzad Naeim spoke during the service, saying "George Housner graced EERI during his lifetime by his presence and blessed EERI in his passing. He was a founding member of EERI and its president during 1950-51 and 1954-1965. EERI's highest honor, the 'George Housner Medal,' is named after him, and he was its first recipient. Four other colleagues of his at Caltech have since received this medal. George mentored a world-class and distinguished group of leaders who have effectively and efficiently led EERI and the cause of advancing earthquake engineering in the United States and worldwide. Many of them are among us today. I remember George for his extraordinary kindness and his unique wit. I vividly remember his last remarks made at an EERI Annual meeting: 'The younger members are the exciting force of EERI. We the older members only provide the necessary damping.' EERI had a special place in George's heart, and in passing he gave EERI a very generous gift to be used at the discretion of the Board of Directors of EERI on projects determined by the Board to be worthwhile and in furtherance of the mission of EERI. We are thankful to George for his contributions to EERI during his lifetime and his passing, and we have every intention to keep his name and memory alive in the best possible ways we can."

A piece written by Paul Jennings, "In Memoriam for George Housner," reprinted from another journal, will be published in the May issue of *Spectra*. Housner's EERI oral history is available online at **http://www.eeri.org/cds_publications/oral_histories/**.

Housner was devoted to collecting art and books. He donated his Asian art collection to Pasadena's Pacific-Asia Museum. The bulk of his rare book collection — approximately 270 titles — and his personal and scientific papers were gifted to the Caltech Archives. Housner also amassed a group of rare early writings on earthquakes, beginning with a 1531 pamphlet claimed to be the earliest published first-hand account of an earthquake printed by the grandson of Gutenberg's assistant and eventual successor, Peter Schoeffer. The event occurred in Mainz, Germany, in 1528. Other notable early printed accounts include several of the great Lisbon quake of 1755 and a very rare illustrated report on the great Ansei quake of 1855 near Tokyo. Images from the Housner book and art collections may be viewed in the Archives' online exhibit, "Documenting Earthquakes: A Virtual Exhibit in Six Parts," at **http://archives.caltech.edu/exhibits/earthquake/index.html**. Part 1 is entitled "Documenting the 1906 Quake"; Part 2: "The Beginnings of Seismology at Caltech"; Part 3: "Charles Richter and the Earthquake Magnitude Scale"; Part 4: "Historical Accounts from the George W. Housner Rare Book Collection"; Part 5: "Namazu-e: Japanese Earthquake Prints from the George W. Housner Collection"; Part 6: "Earthquakes and Volcanoes: Sir William Hamilton's Report to the Royal Society, 1776-1779."



EERI President Farzad Naeim speaks at Housner memorial service (photo: M. Lew).



Title page of Caltech Archives' "Documenting Earthquakes: A Virtual Exhibit" donated by Housner.

Central Italy Earthquake

continued from page 1

(University of Rome), and Marko Schotanus (Rutherford & Chekene), with H. John Price (Curry Price Court) representing the Applied Technology Council.

The GEER team is headed by Jonathan Stewart of the University of California Los Angeles. Italian and Greek geo-engineers have agreed to collaborate on this effort. Other members of this team include George Athanasopoulos, Giovanna Biscontin, Giuseppe Di Capua, Rob Kayen, Scott Kieffer, Guiseppe Lanzo, George Mylonakis, Guiseppe Scasserra, Francesco Silvestri, and Armando Simonelli.

The primary goals of the effort are to capture critical perishable information to advance lessons learned and research in all earthquake-related disciplines and to promote National Science Foundation (NSF) education and professional development objectives. A short report will be posted on the GEER, EERI, and PEER web sites as soon as possible, and a report will be published in the *EERI Newsletter*. It is also anticipated that a briefing will be held in the U.S. and videotaped for further dissemination via EERI's web site.

EERI has created a new blog site **http://www.eqclearinghouse.org/italy-090406** for the L'Aquila earthquake as part of the Learning from Earthquakes Program funded by NSF under grant #CMMI-0758529. It is changing from day to day as researchers post short observations and photos, and readers post comments and responses. Information and photos from other teams have also been posted, and there is a link to the Virtual Disaster Viewer, which has photos from the Earthquake Engineering Field Investigation Team (EEFIT). The BirdsEye view feature enables users to see what the town looked like before the disaster.

For background information on earthquakes in Italy, EERI members can download at no charge the 2000 publication *Recent Italian Earthquakes: Examination of Structural Vulnerability, Damage, and Post-Earthquake Practices,* by J. Maffei, P. Bazzurro, J. Marrow, and A. Goretti, from the members-only area of the web site, **http://www.eeri.org/site/membership/membership-renewal**. A limited number of printed versions are available free of charge to members and nonmembers by calling 510-451-0905 or e-mailing **eeri@eeri.org**.

EERI members can also download the special issue of *Earthquake Spectra*, subtitled *2002 Molise, Italy, Earthquake Reconnaissance Report* (P. Bazzurro and J. Maffei, tech. eds.) originally published in July 2004 (**http://scitation.aip.org/EarthquakeSpectra/**). It is also available to members and nonmembers for $25 plus shipping from **http://www.eeri.org/cds_publications/catalog/index.php?cPath=23_26**.

A concrete frame building with URM infill severely damaged in the L'Aquila earthquake (photo: Bazzurro).

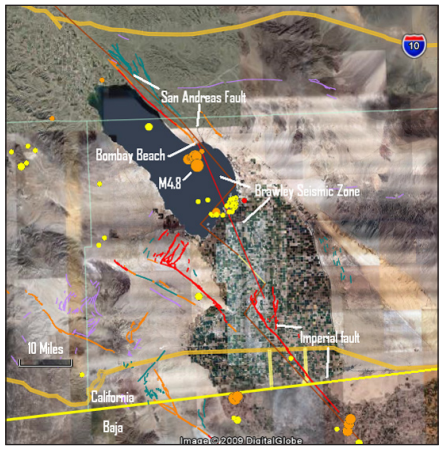
Learning from Earthquakes

So. California Swarm

Contributed by Caltrans' geologist Martha Merriam.

On Saturday, March 21, 2009, an earthquake swarm began at Bombay Beach, near the southern end of the San Andreas fault on the eastern side of the Salton Sea in southern California. Within the first week of the swarm, over 350 earthquakes were recorded, the largest of which was a magnitude 4.8 event that occurred on March 24 at 4:55 AM PST. It was felt by over 400 people within the San Diego region. The M4.8 moment tensor solution displays strike-slip motion, with the preferred nodal plane strike of N57E. This solution is consistent with a fault or faults orthogonal to the San Andreas fault, located in the northern Brawley Seismic Zone.

The NNW-trending Brawley Seismic Zone overlies an inferred short spreading center segment between the San Andreas and Imperial faults in the southern Salton Trough. Precisely relocated seismicity in this zone indicates that it is a series of left-stepping, left-lateral faults. From 1932 to 2008, 722 events were recorded within a 5-km radius of the current swarm. Prior to this sequence, the largest event was M4.2 on 11/13/99: triggered by the Hector Mine earthquake on 10/16/1999.



Satellite image (Digital Globe) of the Salton Sea earthquake swarm area.

Straw Bale House Test

continued from page 1

at the seams, sent out a small cloud of dust and straw, but remained standing.

A resident of Truckee, California, with a master's degree from the UNR civil engineering program, Donovan is the principal investigator for the Endowment Fund-NEES project. Experienced in building with unconventional materials, she was inspired by the 2005 M7.6 Kashmir earthquake to put her expertise to work rebuilding in poor rural areas using straw bales, fishnet, and plaster to create homes in rural Pakistan, where she began building in 2006 utilizing unskilled labor. The Geological Survey of Pakistan estimates the 2005 Kashmir earthquake to have had peak ground accelerations in the range of 0.3 to 0.6g. It killed 100,000 people and left 3.3 million homeless.

PAKSBAB's materials are inexpensive, readily available, and 80% more energy efficient than conventional building materials. Concerns about the stability of a straw structure led Donovan and a team of engineers to conduct the shake test. The primary concern was how the building was fastened together and where the structure would show signs of stress. A full-scale 14'x14' straw house with a gravel foundation and clay plaster walls was constructed on a hydraulic platform at the school's Large Structures Laboratory. Donovan's design uses bales as structural and load-bearing components rather than just insulation, as in some other straw bale designs. The team is considering more tests in the future, after refining building techniques and further reducing costs to enable implementation in more areas around the world.

EERI member Ian Buckle, UNR civil and environmental engineering professor and the lab's director as well as chair of the Special Projects and Initiatives Committee of the Endowment Fund, said, "To be able to use this lab to enhance the safety of houses in developing countries is a huge opportunity for us. Testing is important and crucial to prove that this is a safe method of construction."

For more information about PAKSBAB and its construction method, which has been enthusiastically embraced by the Pakistani community, visit **www.paksbab.org**.

NEES News

Coupling Beams Tested at U Michigan

Professors in the Civil and Environmental Engineering Department at the University of Michigan simulated the effects of a large earthquake in the Structural Engineering Laboratory to test their proposed design procedure for coupling beams in a core-wall structural system. "Our fiber-reinforced concrete beams behaved as well as we expected they would, which is significantly better than the coupling beams in use today," said EERI member James Wight, the Frank E. Richart Jr. Collegiate Professor in the UM Department of Civil and Environmental Engineering.

The engineers used steel fiber-reinforced concrete to develop a better kind of coupling beam that requires less reinforcement and is easier to construct. Coupling beams connect the shear walls of high rises around openings such as those for doorways, windows, and elevator shafts. Working with Professor Wight on this project are EERI members Gustavo Parra-Montesinos, an associate professor, and Remy Lequesne, a doctoral student. "We took quite a bit of the cumbersome reinforcement out of the design and replaced it with steel fibers that can be added to the concrete while it's being mixed," Parra-Montesinos said. This research is funded by the National Science Foundation under the Network for Earthquake Engineering Simulation Program.

The engineers performed their test on a 40-percent replica of a four-story building wall that they built in the laboratory. They applied a peak load of 300,000 pounds against the building, pushing and pulling it with hydraulic actuators. The new coupling beams could provide an easier, cheaper, and more ductile way to provide lateral strength and stiffness to buildings in earthquake-prone areas. The researchers are now working with a structural design firm to install the beams in several high rises soon to be under construction on the west coast. For more information, visit **http://cee.engin.umich.edu/**.

Publication

CTBUH Seismic Design Draft

The Seismic Design Working Group of the Council on Tall Buildings and Urban Habitat (CTBUH) has released the draft version of the *CTBUH Recommendations for the Seismic Design of High-Rise Buildings*, authored by Michael Willford, EERI director Andrew Whittaker, and Ron Klemencic.

The objective of this guide is to set out best-practice principles for the seismic design of high-rise buildings for any level of seismic hazard. Topics covered in the guide include design objectives and philosophy, modeling, seismic hazard assessment, foundation effects, structural analysis and procedures, and energy dissipation components.

For a free download, visit **http://www.ctbuh.org/**, click on Publications, then Books/Reports.

News of the Institute

New EERI Student Chapters: USC, SJSU

EERI is pleased to announce that two new EERI student chapters have been established in the past month. Both are affiliated with their departments of civil engineering.

The **University of Southern California** chapter's faculty advisors are Jean-Pierre Bardet and Thomas Jordan, and its professional contact member is EERI President Farzad Naeim.

The **San Jose State University** chapter's faculty advisors are EERI Past President Thalia Anagnos and Kurt McMullin. Its professional contact member is Daniel Shapiro of SOHA Engineers in San Francisco.

News from EERI Partner, AEES

The Australian Earthquake Engineering Society (AEES) and EERI signed a memorandum of understanding in 2004 to promote and sponsor collaboration between both parties with the goal of participating jointly in scientific and technical activities related to earthquake engineering. Both organizations look forward to increasing this collaboration with the EERI, particularly since the USA and Australia share great regions of similar seismicity that are heavily urbanized. All technical papers from AEES annual conferences are available from its web site, **www.aees.org.au**.

AEES is heavily involved in the training of engineers for urban search and rescue and is responsible for the Australian Earthquake Loading Standard, which was updated and released in 2007, and the accompanying commentary. AEES has around 200 members, consisting of seismologists, engineers and insurance specialists. The society was formed after the 1989 M5.6 Newcastle earthquake, which killed 13 people and caused extensive damage. (The EERI report is posted at **www.eeri.org/lfe/pdf/australia_newcastle_1989_eeri_preliminary_report.pdf**.)

Call for Papers

X Chilean Conference

The X Chilean Conference on Seismology and Earthquake Engineering will be held May 22-27, 2010, in Valdivia-Santiago, Chile, to commemorate the 50th anniversary of the M9.5 1960 Chile earthquake. For more information on the call for papers (deadline 5-30-09), visit **www.achisina2010.uchile.cl**. The conference official languages are Spanish and English.

Obituary

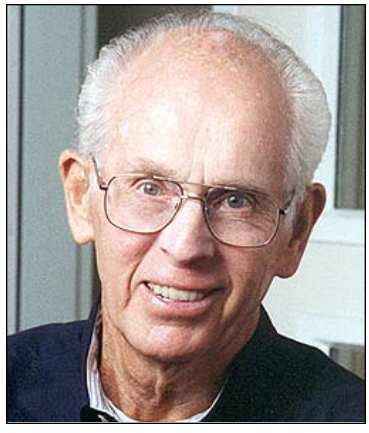
Thomas D. Wosser, 1925-2009

Former EERI member Thomas D. Wosser, former president of Degenkolb Engineers, passed away peacefully at home on March 29, 2009. Renowned for his technical expertise, personal grace, and commitment to the profession, he was one of Degenkolb's most respected structural engineers — a leader in both the firm and the field.

Throughout his more than fifty-year career as a structural engineer, Tom evaluated, designed, and strengthened healthcare facilities, university buildings, parking garages, and historic structures. He helped the University of California Berkeley evaluate and rank their buildings for seismic safety. An honorary member of SEAONC since 1994, Tom traveled to major earthquake sites throughout the world to conduct reconnaissance investigations. In 2005, Tom was named one of Engineering News Record's Top Newsmakers and given a Special Achievement award by the American Institute of Steel Construction for his work developing CASE guidelines: *A Guideline Addressing Coordination and Completeness of Structural Construction Documents*. Tom had led the two-year effort that produced the 35-page "coping mechanism" to raise the quality of professional practice. The primer defines and discusses nearly everything an engineer needs to know on the business of a project, including design team responsibilities, delivery systems, and quality management.

After earning a B.S. in civil engineering from U.C. Berkeley, he joined Degenkolb. A significant contributor to the seismic design provisions used today, he productively served in leadership roles in technical and professional affiliations at the state and national levels, and wrote many articles for publication. Among his peers, he stood as a role model for engineering and professional integrity. He was elected a Fellow at the American Consulting Engineer Council.

Upon retirement after eleven years (1979-1990) as president of Degenkolb, he and his wife moved to Lincoln Hills, California, where he continued to use his abundant talents in many activities with infectious enthusiasm. Tom is survived by his wife and two daughters.



Thomas D. Wosser

Subscribing Member News

Imbsen Joins EPS

Roy A. Imbsen

EERI member Roy A. Imbsen of Imbsen Consulting has joined Subscribing Member Earthquake Protection Systems (EPS) to lead its Bridge Seismic Engineering Division on a worldwide basis. Imbsen will be implementing new seismic design standards for bridges to provide cost-effective construction of bridges designed to remain fully operational after major earthquakes. EPS designs and supplies seismic isolation systems used in bridges, buildings, and industrial facilities. EPS clients will benefit from the synergy between Imbsen's 40 years of pioneering developments in seismic design and bridge codes, and the Friction Pendulum technology developed at EPS. For more information, visit **http://www.earthquakeprotection.com/**.

CSI Web Demo

EERI Subscribing Member Computers and Structures will host a series of one-hour web demonstrations that will highlight the innovative features of the all-new SAFE V12, scheduled for May 7, May 14, and May 21. The fee is $35.

SAFE is an integrated tool for designing reinforced and post-tensioned concrete floor and foundation systems. This version introduces versatile 3D object-based modeling and visualization tools. From framing layout to detail drawing production, SAFE integrates every aspect of the engineering design process in one easy and intuitive environment. For more information, visit **http://orders.csiberkeley.com/ProductDetails.asp?ProductCode=WEB_SAFE_INTRO**.

Opportunities

NRC Openings

The U.S. Nuclear Regulatory Commission is seeking Senior Structural Engineers (vacancy announcement # RES/DE-2009-0008 and/or RES/DE-2009-0009) and a Seismologist/Geophysicist (vacancy announcement # RES/DE-2009-0010) to work in the Office of Nuclear Regulatory Research in Rockville, Maryland.

The **structural engineer** responsibilities include technical and administrative functions associated with research programs and development of technical positions for national standards and regulations related to the behavior of civil structures used in nuclear power plants and fuel cycle facilities. Required: specialized experience in structural or civil engineering, or applied mechanics and its application in the evaluation of structures, systems, and components used in nuclear power plants, or fuel cycle facilities.

Seismologist/Geophysicist responsibilities include evaluating the geophysical aspects of past and potential earthquake occurrences and their implications for safety requirements of nuclear facility design. Required: knowledge of the scientific principles, theories, and practices in the field of geoscience with emphasis in seismology.

For detailed information regarding these vacancies and to apply, visit **www.usajobs.com** and search by the above announcement numbers. Online applications will be accepted until May 18, 2009.

Announcements

Georgia Tech Online Courses

The Georgia Institute of Technology is offering three self-paced online civil engineering courses beginning May 1. They must be completed during the period indicated below. Registration is open through May 15 at **www.dlpe.gatech.edu/ce/ebsdl/**.

1. Wood Design ($595, 1.4 CEUs), May 1–June 12, 2009.
2. Application of the 2005 AISC Direct Analysis Method (DM) to the Design of Steel Structures ($545, 1.2 CEUs), May 1–June 12, 2009.
3. Advanced Topics in Structural Analysis ($495, 1.0 CEU), May 1–May 29, 2009.

TCLEE 2009 Program

The 7th International Conference of the ASCE Technical Council on Lifeline Earthquake Engineering (TCLEE 2009) with the theme "Lifeline Earthquake Engineering in a Multihazard Environment" will be held in Oakland, California, June 28-July 1, 2009. Cosponsored by EERI, the conference will include nearly 150 papers that will address topics related to performance requirements, design, retrofit, and analysis of lifelines subjected to earthquakes and other hazards, such as system risk analysis, hazard estimation, experience from past events, lifeline risk management project funding, lifeline interdependence, and emergency response and recovery planning.

Pre-conference workshops and post-conference field trips will be closely related to the conference theme. Available space for these workshops is limited, so register early to ensure your participation. Register by May 28 and save $100 on your registration fee. For up-to-date information on the conference program, activities, and registration, visit **www.asce.org/tclee2009**.

CALENDAR

Items that have appeared previously are severely abbreviated. The issue containing the first appearance, or the most informative, is indicated at the entry's end. Items listed for the first time are shown in bold.

MAY

8. LATBSDC Conf., Los Angeles, CA. Info: **www.air-worldwide.com** (3/09)

8. Geo-Engineering Lectures, UC Berkeley. Info: **http://peer.berkeley.edu/events/2009/geoengineering_lecture/index.html** (4/09)

31-June 3. 11th Canadian Masonry Symp., Toronto, Ontario, Canada. Info: **wwwcanadianmasonry-symposium.org/** (12/08, 2/09)

JUNE

1-3. SEM Annual Conf. & Expo on Experimental and Applied Mechanics, Albuquerque, NM. Info: **http://sem.org/CONF-AC-TOP.asp** (9/08)

3-5. Advancing New Madrid Region Time-History Determination, Shlemon Specialty Conf., Memphis, TN. Info: **www.aegweb.org** (3/09)

8. PEER/Caltrans Seis. Research Seminar, Sacramento, CA. Info: **http://peer.berkeley.edu/events/transportation_seminar.html** (1/09)

12-13. Int'l Conf on Open Risk Analysis (ICORA), University of Cambridge, UK. Info: **www.riskagora.org** (4/09)

15-17. Int'l Conf. on Performance-Based Design in EQ Geotech Eng., Tokyo, Japan. Info: **http://www.comp.tmu.ac.jp/IS-Tokyo/** (6/08)

21-24. 19th World Conf. on Disaster Mgmt. (WCDM), Toronto, Canada. Info: **www.wcdm.org/** (10/08)

22-24. 2nd Int'l Conf. on Computational Methods in Struct. Dynamics and EQ Eng., Rhodes, Greece. Info: **www.compdyn2009.org** (11/08)

22-25. NEES Annual Meeting, Honolulu, HI. Info: **www.cmmigranteeconference.org** (2/09)

22-24. EQ & Tsunami Conf., Istanbul, Turkey. Info: **http://www.imo.org.tr/eqt2009/** (5/08)

28-July 1. TCLEE Conf.: Lifeline EQ Eng. in a Multihazard Environment, Oakland, CA. **See page 6.** (8/08, 10/08, 3/09, 5/09)

AUGUST

13-14. Asian-Pacific Network of Centers for EQ Eng. Research (ANCER) Wksp, Urbana-Champaign, IL. **http://illinois.edu/goto/ANCER** (2/09)

19-21, 2nd Int'l Wkshp. on Perf., Protect'n & Strength'g of Structures under Extreme Loading, Hayama, Japan. Info: **www.nda.ac. jp/cc/users/fujikake/protect2009** (12/08)

SEPTEMBER

2. Seminar on Next Generation Attenuation (NGA) Models, Oakland, CA. See page 8. (5/09)

3. Seminar on NGA Models, Seattle, WA. See page 8. (5/09)

10. Seminar on NGA Models, Salt Lake City, UT. See page 8. (5/09)

11. Seminar on NGA Models, Los Angeles, CA. See page 8. (5/09)

13-17. 10th Int'l Conf. on Structural Safety & Reliability (ICOSSAR2009), Osaka, Japan. Info: **www.sc.kutc.kansai-u.ac.jp/icossar2009** (2/08)

20-23. 4th Int'l Conf. on Geohazards, Sun Moon Lake, Nantou, Taiwan. Info: http://www.engconfintl.org/9ad.html (5/09)

23-26. SEAOC Conv., San Diego, CA. Info: **http://seaoc2009.com/** (2/09)

28-Oct. 10. Adv. School on Nonlinear Dynamics and EQ Prediction, Trieste, Italy. Info: **http://agenda.ictp.it/smr.php?2060** (4/09)

OCTOBER

2-3. EQ Geotech. Eng. Satellite Conf., Alexandria, Egypt. Info: **mamsakr@yahoo.com** (12/08)

5-9. 17th Int'l Conf. on Soil Mechanics and Geotech. Eng., Alexandria, Egypt. Info: **http://www.2009icsmge-egypt.org/** (12/08)

15-16. PEER Annual Meeting, San Francisco, CA. Info: **http://peer.berkeley.edu/events/peer_annual_meeting.html** (3/09)

17. Loma Prieta Anniv. Event, San Francisco, CA. Info: **http://peer.berkeley.edu/events/2009/annual-meeting_eq_anniversary.html** (3/09)

NOVEMBER

10-15. 5th Congress on Forensic Engineering, Washington, D.C. Info: **http://content.asce.org/conferences/forensics2009/index.html** (12/08)

25-26. 7th Int'l Probabilistic Workshop, Delft, The Netherlands. Info: **www.elsevier.com/wps/find/newsdetail.cws_home/NWS_WN_nt00008088/essay** (3/09)

DECEMBER

9-11. Improving the Seismic Performance of Existing Buildings and Other Structures, San Francisco, CA. Info: **www.ATC-SEI.org** (12/08)

2010

FEBRUARY

3-6. EERI Annual Meeting, San Francisco, CA. Info: **www.eeri.org** (3/09)

MAY

22-27. X Chilean Conf. on Seis. & EQ Eng., Valdivia-Santiago, Chile. See page 5. (5/09)

24-29. 5th Int'l Conf. on Recent Advances in Geotech. EQ Eng. & Soil Dynamics and Symp. in Honor of I.M. Idriss, San Diego, CA. Info: **5geoeq-conf2010.mst.edu** (4/08, 1/09)

JULY

11-15. 5th Int'l Conf. on Bridge Maintenance, Safety and Mgmt. (IABMAS), Philadelphia, PA. Info: **http://www.iambas2010.org** (11/08)

25-29. 9th U.S. Nat'l & 10th Canadian Conf. on EQ Eng.: Reaching Beyond Borders, Westin Harbour Castle Hotel, Toronto, Canada. **2010eqconf.org** (2/08, 7/08, 1/09, 3/09)

AUGUST

30-Sept. 3. 14th European Conf. on EQ Eng. (14ECEE), Skopje-Ohrid, Macedonia. Info: **www.eaee.boun.edu.tr/eaee.htm** (12/08)

SEPTEMBER

5-9. Gen. Assembly of European Seis. Com. (ESC 2010), Montpellier, France. Info: nottin@emsc-csem.org (5/09)

EARTHQUAKE ENGINEERING
RESEARCH INSTITUTE
499 14th Street, Suite 320
Oakland, CA 94612-1934
ADDRESS SERVICE REQUESTED

EERI Newsletter, May 2009 Volume 43, Number 5

News of the Institute

NGA Seminar

Save one of the following 2009 dates for the one-day EERI Seminar, funded by FEMA, on Next Generation Attenuation (NGA) Models: Oakland, September 2; Seattle, September 3; Salt Lake City, September 10; and Los Angeles, September 11. Online registration will be available by mid-July. CEUs (.7) will be awarded to participants upon completion of the seminar. Both structural and geotechnical engineers interested in the implications for engineering practice of the recently developed NGA models will be interested in this seminar.

For more information about the speakers and presentations, visit **www.eeri.org**.

ICC Publications via EERI

EERI has established a cooperative relationship with Subscribing Member International Code Council to mutually promote and sell each other's publications that would be of interest to the members of both organizations. EERI members can now obtain the following ICC publications at the prices shown below (plus shipping, and tax for California residents), which are discounted for EERI members 25% from the list price, by visiting EERI's online store, **http://www.eeri.org/cds_publications/catalog/**:

Loads and Load Paths in Buildings: Principles of Structural Design ($92), *Earthquake Engineering from Engineering Seismology to Performance-Based Engineering* ($113), *Seismic and Wind Forces Structural Design Examples,* 3rd edition ($54), and *Structural Load Determinations Under 2006 IBC and ASCE/SEI 7-05* ($49).

News of the Profession

ShakeOut 2009 Plans

The Earthquake Country Alliance (ECA) of California is making plans for ShakeOut 2009, to expand on the success of southern California's Great Shakeout of November 2008, in which more than 5.47 million people participated. According to the USGS Newsroom, when the historic week of earthquake preparedness events was concluded, including millions taking part in the "Drop, Cover, and Hold On" drill, a meeting of emergency managers and community leaders met to examine the value of the effort. The participants overwhelmingly supported the idea of turning it into a statewide annual week of disaster preparedness activities.

The annual date selected is the third Thursday of October, which this year is October 15. So far, ECA is a confederation of the Southern California Earthquake Alliance, the Bay Area Earthquake Alliance, and the Redwood Coast Tsunami Workgroup. Other alliances may be organized soon. Organizers hope to expand the level of participation and range of life-saving preparedness activities. Each area will choose its scenario, which for northern California could be tied to the 20th anniversary of the 1989 Loma Prieta earthquake. Goals are improved communication with citizens groups, neighborhood watch groups, and the public; getting more buy-in from the top level in many organizations, businesses, and educational institutions; giving people more time to get ready; expanding information in multiple languages and for vulnerable groups; building on resources and sponsors developed in 2008; expanding the use of social networking sites; developing a statewide public-private partnership; expanding ECA websites and resources to serve the entire state; and seeking funding from FEMA, USGS, NSF, CalEMA, the Seismic Safety Commission, CEA, and corporate sponsors.

An announcement has been sent to the school registrants from 2008, resulting in 1.7 million participants for 2009 so far. Registration is open to all at **http://www.shakeout.org/**.