News of the Institute

2008 Annual Meeting: Lessons from Katrina

The EERI Annual Meeting Planning Committee, chaired by Laurie Johnson, is crafting an exciting program for the 2008 meeting in New Orleans. It will be held February 6-9 at the Astor Crowne Plaza Hotel in the French Quarter. All the committee members have been involved in various aspects of the 2005 Hurricane Katrina response and recovery and are bringing their first-hand knowledge to the planning efforts.

Hurricane Katrina offers many lessons on the management of extreme risks and the response to a large-scale urban catastrophe. Next year’s meeting provides an opportunity for participants to examine collectively the major elements of the Katrina disaster, including impacts on transportation, ports, the onshore and offshore energy sector, hospitals and critical facilities, and their applicability and transferability to earthquake-prone regions in the United States and abroad. Sessions will also examine the regional flood risk management strategies, the use of scenarios for catastrophe planning and exercises, and disaster data management efforts, both in the immediate aftermath and in the recovery. On the afternoon of Saturday, February 9, participants will have an opportunity to tour the affected region and meet with experts in the field to discuss key lessons from both Katrina’s impacts and the ongoing recovery.

Chang Awarded NEHRP Graduate Fellowship

Barbara Chang, a Ph.D. candidate in structural engineering at the University of California at San Diego, has been selected as the 2007-2008 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. The award is given to foster the participation of capable individuals in furthering the goals and practice of earthquake hazard mitigation.

Chang comes to earthquake engineering with an undergraduate degree in mechanical engineering and several years in practice. Returning to graduate study, Chang obtained her masters degree in civil engineering at UC Irvine, and is currently carrying out final work towards her doctoral degree under the direction of Associate Professor Tara Hutchinson at UCSD. Chang is interested in determining the optimal properties of shallow foundations that will minimize building system damage during seismic loading. Professor Hutchinson points out that the findings from Chang’s research on the effects of soil structure interaction will have important implications for methods of performance-based earthquake engineering and will be “extremely beneficial to practicing engineers.” Chang is planning on a career in academia.
Heritage Prize
Through the generous sponsorship of Wiss Janney Elstner Associates, Inc., EERI’s Heritage and Existing Structures Committee (HESCO) is continuing to offer a prize to highlight the contributions of individuals and organizations for their creativity, innovation, and leadership in the seismic protection of historical monuments, heritage sites, and cultural artifacts. A $1,000 prize will be presented to recognize outstanding contributions in the development or implementation of innovative solutions or policies to preserve heritage structures or related artifacts. The goals of the prize are to recognize the exceptional contributor and to stimulate further creativity and leadership in the field of earthquake risk management for the protection of irreplaceable resources.

The award will be presented at the EERI Annual Meeting. Nomination packages (including self-nominations) must be received by November 1. Applications including a 1-to-2-page letter of recommendation and a 1-to-2-page resume should be sent to Erol Kalkan at Erol.Kalkan@conservation.ca.gov.

Publication
Heritage Architecture
Featuring contributions from the Tenth International Conference of Structural Studies, Repair, and Maintenance of Heritage Architecture in 2007, the book Structural Studies, Repair, and Maintenance of Heritage Architecture X covers a broad spectrum of topics, including heritage architecture and historical aspects, regional architecture, nondestructive evaluation of historic masonry structures, material characterization, repair and maintenance, preservation and prevention, structural issues, simulation and modeling, seismic vulnerability analysis of historic sites, and seismic behavior and vibrations.

The 736-page book will be of interest to architects, building surveyors, structural engineers, and archeologists involved with the preservation and restoration of historical structures. Published by the Wessex Institute of Technology Press, the book is priced at US$475 (UK£238/€357). For more information, visit http://www.witpressusa.com/acatalog/9781845640859.html.

Abstracts are available free, and full texts of individual papers in the book are available for $30 through the electronic edition of WIT’s Transactions at http://library.witpress.com/.
News of the Institute

Geotech Seminar Video Downloads

Beginning in April, EERI members have had free access to video downloads of six presentations, one at a time for one week each, from the March 2007 EERI seminar on “Impact of Soil-Structure Interaction (SSI) on Response of Structures: Practical Applications to Shallow Foundations.” Many members took advantage of this new benefit; traffic on the site indicated a total of 1,275 visits from all over the world: 75% from the Western Hemisphere, 14% from Asia, 9% from Europe, and 2% from Oceania and Africa.

These videos are now available to members to download for $25 each. (For nonmembers, the cost is $45.) Go to http://www.eeri.org/cds_publications/catalog/ and click on “Video Downloads.” The presentations are (1) “Overview of SSI” by Jonathan, Stewart; (2) “Performance-Based Guidelines for Structural and Geotechnical Practitioners” by Craig Comartin and Geoffrey Martin, (3) “Impact of Foundation Response on the Retrofit of an Existing Hospital” by Marshall Lew and Aaron Reynolds; (4) “Field Testing to Determine Realistic Geotechnical Parameters” by Ryan Shafer, (5) “Impact of Foundation Modeling on the Performance-Based Evaluation of a Judicial Facility” by Mark Moore, and (6) “New Tools for Structural and Geotechnical Practitioners on the Horizon” by Tara Hutchinson.

Once the files are downloaded, they can be used indefinitely. A moderately fast internet connection is needed in order to view the videos once downloaded (for example, a DSL connection).

Spectra Online Access

To find instructions to access EQ Spectra Online (if you’ve never registered or have forgotten), visit http://www.eeri.org/cds_publications/spectra_about.html.

NEES News

Streaming Videos of NEES Presentations

Looking for an easy way to catch up on the latest developments in earthquake engineering? NEESinc has posted free streaming videos of presentations by practitioners and researchers that were recorded at the 5th NEES Annual Meeting in June. These sessions, which address the intersections of research and practice, are broken into 20-minute segments, making them easy to view over lunch, as part of a professional gathering, or to get conversations started at your organization.

Sessions include the following:

- **Identifying Needs and Challenges in Practice** features industry leaders such as Edward Clukey of BP, Jim Malley of Degenkolb Engineers, Ron Klemencic of Magnusson Klemencic Associates, Greg Kingsley of KL & A, Kelly Cobeen of Cobeen & Associates, and Craig Comartin of Comartin & Associates. Each speaker highlights critical concerns for specific building materials including steel, wood, concrete, and masonry, as well as new developments in the oil and gas industry, and performance-based design.

- **Next-Generation Research and Experimental Techniques** provides new strategies and surprising insights from recent research. Tom O’Rourke explains which materials provide the most secure conduits for water, gas, power, and other underground lifelines, and how new innovative sensor technology is helping to track down pipeline deformations. Andre Filiatraut details what happened when a two-story townhouse, mounted on twin shake tables, was subjected to earthquake simulations, including which building elements impacted the displacements and how well current building codes worked. Sri Sritharan covers how telepresence technology is changing the way research can be conducted.

- **Next-Generation Research and Experimental Techniques II** focuses on emerging projects, including Charles W. Roeder’s description of a new international collaboration to improve braced-frame systems, M. Saiid Saiidi’s report on large-scale testing of a four-span reinforced concrete highway bridge, and Henri P. Gavin’s update on assessing the effectiveness of equipment isolation systems that safeguard vital tools used by hospitals, emergency response centers, and data centers. You will learn what research is being planned and how researchers are leveraging technology to enable complex, hybrid testing models.

- **Next-Generation Research and Experimental Techniques III** highlights new tools being developed within NEES for earthquake engineering research. You will discover from S. Thevanayagam how laminar boxes can be used to simulate liquefaction and its effects on pile foundations, from Jerome P. Lynch and Andrew Zimmerman how researchers at the University of Michigan are integrating wireless sensor networks into Real-Time Data View (RDV) visualization tools, and from Matt Shoettler how a team of researchers and practitioners at the University of California at San Diego is developing a comprehensive seismic design methodology for precast concrete floor diaphragms.

To view these sessions at any time, visit http://www.nees.org/5am/sessions.php. Also available at this site are many PDFs of PowerPoint presentations given during the concurrent breakout sessions.
News of the Profession

PEER Celebrates 10 Years

In a day-long review of research and educational accomplishments, the Pacific Earthquake Engineering Research Center (PEER) celebrated ten years of funding by the National Science Foundation (NSF). An NSF site visit team attended the recent summative meeting in San Francisco, gathering information on PEER’s programs and preparing to write a final report on NSF’s investment.

With the theme “Celebrating a Decade of Innovations and Impacts in Performance-Based Earthquake Engineering,” presentations were made by PEER researchers and students. They recounted the formation of PEER, its development over the past decade, its major accomplishments and impacts, and future plans. It specifically covered research, education, and technology transfer successes, and the involvement of several key contributors.

According to PEER Director Jack Moehle, “When PEER started its program in 1997, performance-based earthquake engineering was in its first generation, often relying on prescriptive approaches that provided a nominal measure of expected performance. Since that time, PEER developed a more rigorous performance-based approach, with performance measured in systems-level metrics that matter to stakeholders. PEER also created simulation technologies, models, and criteria to enable practical implementation of performance-based engineering approaches. Today, the impact of PEER’s research, education, and technology transfer programs can be found throughout the building, transportation, and utility industries.”

PEER’s many business and industry partners were recognized for investing in the center and its mission. These relationships, Director Moehle emphasized, have positively affected seismic safety and set forth a model approach that will accelerate developments in the future.


Learning from Earthquakes

M6.6 Earthquake Strikes Japan

An earthquake with a moment magnitude of 6.6 occurred off the west coast of Japan on Monday, July 6, 2007, at 0:3 AM local time. Its depth was 10 km; its location was 37.570N, 138.478E, which is about 65 km SW of Niigata, Japan. This earthquake is believed to have occurred due to deformation within the crust of the Okhotsk plate. A second earthquake occurred 3 hours later that was further offshore and at much greater depth, due to the subducting Pacific Plate.

The first earthquake caused considerable destruction. The USGS ShakeMap shows PGA values as high as 0.25 g along the coast. Nine people died, hundreds more were injured, and thousands were made homeless. The earthquake caused damage to buildings, roads, bridges, and other lifelines. Of particular concern was damage to the Kashiwazaki-Kariwa Nuclear Power Plant, the world’s largest. It was reported that radioactive material was released into the sea and into the atmosphere. A fire broke out at a transformer, barrels of waste were overturned, and pipes broke. There seems to have been a delay in notifying the public.

An EERI team will provide more information in a future Newsletter.
EERI ANNUAL STUDENT PAPER COMPETITION

The Earthquake Engineering Research Institute is pleased to announce its Annual Student Paper Competition. The purpose of the competition is to promote active involvement of students in earthquake engineering and the earthquake hazards research community.

The general rules of the contest are as follows:

Graduate Category
1. The paper must be an original contribution in a discipline directly related to earthquake engineering or earthquake hazard reduction.
2. The paper is not to exceed 12 pages in length inclusive of all tables and figures.
3. The paper must represent the original work of the student and be authored by the student alone. A faculty member or other advisor may not co-author the paper.

Undergraduate Category
1. The paper must be directly related to earthquake engineering or earthquake hazard reduction.
2. The paper is not to exceed 12 pages in length inclusive of all tables and figures.
3. The paper must be authored by the student alone. In addition, a faculty member or other advisor is required to oversee the preparation of the manuscript. The advisor can provide feedback before submission of the paper but may not co-author the paper. The advisor’s name should be included in the “Acknowledgments” section.

Guidelines for preparing the manuscript can be obtained from the EERI web site (http://www.eeri.org/news/student_paper_competition_instructions.pdf) or from:
EERI, 499 14th Street, Suite 320, Oakland, CA 94612, phone 510/451-0905, fax 510/451-5411. All papers must be received by November 1, 2007, at the EERI office.

Up to four student authors will be invited to EERI’s Annual Meeting, February 6-9, 2008, in New Orleans, Louisiana, and will receive travel support for this purpose. Their papers will also be considered for publication in Earthquake Spectra. The top paper in the graduate category may be presented at the Annual Meeting.

** DEADLINE: November 1, 2007 **
Call for Submissions

Caltrans Programs

Every year, the California Department of Transportation (Caltrans) spends $4 million on earthquake-related research. About $500,000 supports the PEER Lifelines Program, which is an industry partnership primarily funded by Caltrans, Pacific Gas & Electric, and the California Energy Commission. The program is "user-driven" in that technical staff from these organizations are closely involved in the selection and management of the research program. The Lifelines Program's signature product is the recently released Next-Generation Attenuation (NGA) models for ground motion prediction. These models and the supporting research used for their development will be the subject of an upcoming special volume of Earthquake Spectra (2nd quarter of 2008). More information on the Lifelines Research Program can be obtained at http://peer.berkeley.edu/research/lifelines.html.

Caltrans also manages an active program of both seismic and non-seismic research. Research problems in a wide variety of topics are solicited (both from within Caltrans and externally) on an annual basis. Those deemed the highest priority are advertised in a Call for Submissions (CFS) process.

Recently funded research projects include the following by EERI members: “An evaluation of how vertical acceleration impacts bridges” (S. Kunnath), “Designing bridges for lateral spreading soils” (R. Boulanger), “The influence of near-fault ground motions on current bridge designs” (M. Saidi), and “Tsunami hazard map of California” (P. Somerville).

Results of this research are often immediately put to use in the latest update of Caltrans’ Seismic Design Criteria.


Call for Papers

Smart Structures Conference

The Department of Civil Engineering of the Coimbatore Institute of Technology in Tamilnadu, India, is organizing an international conference on “Innovative and Smart Structural Systems for Sustainable Habitat” (INSHAB-2008), January 3-5, 2008.

Smart structures are achieved through the incorporation of sensing and actuating devices that deal effectively with the response of structures under variable ambient stimuli. This conference will provide an opportunity to understand the latest developments in smart materials and smart structures. Abstracts not exceeding 250 words should be submitted on or before July 30, 2007, on one of the following topics: smart materials, smart structures, passive architecture, philosophical issues, interaction with users, application to disasters, application to lifeline structures for operation, strategic applications, earthquake-resistant structural systems, wind-resistant systems, performance-based design, reliability of structural systems, infrastructure analysis and design, fast track construction, use of nano materials, architecture of steel construction, and modern trends in concrete and prestressed concrete structures. For more information, visit www.citinshab2008.info.

Software

EQRM Seismic Hazard and Risk Software

Geoscience Australia has posted an open-source alpha-release version of their earthquake risk modeling software (EQRM) on SourceForge. EQRM is capable of earthquake scenario ground motion and scenario loss modeling as well as probabilistic seismic hazard (PSHA) and risk (PSRA) modeling. The program can be used for hazard or risk analyses in any region of the world by supplying appropriately formatted input files. The source code is supplied, so users can modify individual components to suit their needs. EQRM is a product of Geoscience Australia, an Australian Government Agency. To download, visit https://sourceforge.net/projects/eqrm.

Publication

Earthquake Design Tips for Nontechnical Audience

Earthquake Tips: Learning Earthquake Design and Construction by EERI member C.V.R Murty is one of the most popular publications issued by the National Information Center of Earthquake Engineering (NICEE) at the Indian Institute of Technology Kanpur, India. With a series of 24 tips, the 48-page booklet introduces the concepts of earthquake-resistant construction in an easy-to-understand, graphic format. It addresses the causes and effects of earthquakes, the basic physics of their effects on structures, and the basic design and construction features for earthquake-resistant masonry and reinforced concrete structures. Tips can be downloaded free-of-charge from www.nicee.org. Printed copies (in color) can be ordered for approximately US$10, including air mail postage, from http://www.nicee.org/payment.php.
**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**.

**AUGUST**

**SEPTEMBER**


**OCTOBER**
1-6. 12th IACMAG Conference, Goa, India. Info: [www.12iacmag.com](http://www.12iacmag.com) (4/07)


8-11. Modern Trends in Structural Engineering for Seismic Design, Ariel, Israel. Info: [ribakov@yosh.ac.il](mailto:ribakov@yosh.ac.il) (8/06)


**NOVEMBER**


**DECEMBER**


**JANUARY**
3-5. INSHAB-2008, Tamil Nadu, India. See page 6. (8/07)

**FEBRUARY**
6-9. EERI Annual Meeting, Astor Crowne Plaza Hotel, French Quarter, New Orleans, LA. See page 1. (2/07, 3/07, 7/07, 8/07)


**APRIL**

24-26. 1st International Conf. on Transport Infrastructure, Beijing, China. Info: [http://www.jtzx.net.cn/icti/](http://www.jtzx.net.cn/icti/) (7/07)

**MAY**
18-22. Geotechnical Earthquake Engineering and Soil Dynamics Conf. IV, Sacramento, CA. Info: [www.geesd.org](http://www.geesd.org) (10/06)


**JUNE**

**JULY**
27-30. 6th National Seismic Conf. on Bridges and Highways, Charleston, S.C. Info: [www.scdot.org/events/6NSC](http://www.scdot.org/events/6NSC) (7/07)

**AUGUST**
11-16. 6th International Conf. on Case Histories in Geotechnical Engineering (6ICCHGE), Washington, D.C. Info: [http://www.6icchge2008.org](http://www.6icchge2008.org) (4/06, 9/06, 2/07, 6/07)

**OCTOBER**
12-17. 14th World Conference on EQ Engineering, Beijing, China. Info: [www.14wcee.org](http://www.14wcee.org) (12/05, 6/07, 7/07)
News of the Profession

Bay Area Preparedness Initiative

The Fritz Institute has appointed EERI Board members Laurie Johnson and Rich Eisner to posts in the new San Francisco Bay Area Preparedness Initiative (BAPI): Johnson as director and Eisner as government liaison. Founded in 2001, the nonprofit Fritz Institute is dedicated to improving global disaster relief by creating innovative approaches to ensure help arrives when and where it’s needed most.

In 2006, the institute hosted a conference of key stakeholders across different sectors to assess disaster preparedness in the Bay Area. BAPI is the result of the conference’s mandate to establish a collaborative cross-sector, grass-roots approach to disaster preparedness. It is a joint effort to identify gaps in disaster preparedness and develop ways to measure and improve preparedness and response capacity in the region. BAPI will have three key elements, namely, (1) assessing and establishing baselines of preparedness for community-based (and faith-based) organizations (CBOs); (2) developing a cross-sector community of practice to facilitate collaboration, dissemination of lessons learned, and innovative partnerships and solutions; and (3) development of objective, third-party standards of preparedness for a limited set of indicators. BAPI has the potential to serve as a national model for how the nonprofit and faith-based sector can more effectively partner with uniformed first responders and the city and state infrastructure in serving local citizens in disaster situations. BAPI is supported by a lead grant from the William and Flora Hewlett Foundation, with additional funding from the San Francisco Foundation, the Walter & Elise Haas Fund, and Pacific Gas & Electric Co.

The Fritz Institute has launched a major research study on the disaster response capacity of CBOs in San Francisco. The research will be led by EERI member Kathleen Tierney, director of the Natural Hazards Center at the University of Colorado, and will be the nation’s first study on the resilience of CBOs. It is anticipated that this research will lead to recommendations to government and philanthropic leaders on strengthening first responders’ disaster response capacity.

For more information, visit http://www.fritzinstitute.org/.

Publication

Historic Ground Failures Now Online

U.S. Geological Survey Professional Paper 993, Historic Ground Failures in Northern California Triggered by Earthquakes, is now available online. Both text and plates of this out-of-print report published in 1978 were recently scanned and posted at http://pubs.usgs.gov/pp/1978/pp0993/. Coauthored by EERI member T. Leslie Youd and Seena Hoose, the report compiles observations and locations of liquefaction and landslides that were noted during the large 1868 and 1906 earthquakes in northern California. Scans of photos used in the report may also be found at the web site. This version joins the online versions of the professional papers that documented effects from the 1989 Loma Prieta M6.9 earthquake at http://earthquake.usgs.gov/regional/nca/1989/papers.php.

Scanning the text of these papers was done with the assistance of EERI member Charles Scawthorn.