News of the Institute

Update on Concrete Coalition

The last few months have been eventful for the EERI Concrete Coalition Project, funded by the California Emergency Management Agency (Cal-EMA). Progress has been made with the city of Los Angeles, pilot cities, and in recruiting volunteers to help develop estimates statewide.

City of Los Angeles: Craig Comartin, project director, has been meeting regularly with Councilman Greig Smith’s office and building owner representatives to discuss ideas for voluntary retrofits. A first step in this process is to understand the risk more precisely—what building configurations or components are most likely to contribute to serious building damage in an earthquake? This problem is the focus of the NEES Grand Challenge project (http://peer.berkeley.edu/grandchallenge/index.html) that is ongoing under the direction of Professor Jack Moehle of UC Berkeley. As part of this project, researchers are interested in practicing engineers’ opinions on the most critical deficiencies for this type of building. If you are interested in

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2007 Outstanding Spectra Paper Award

The Earthquake Spectra Editorial Board and the EERI Honors Committee selected the following paper, from the August issue of volume 23 (pp. 493-523), to receive the 2007 Earthquake Spectra Outstanding Paper Award: “Update to ASCE/SEI 4 Concrete Provisions,” by Kenneth Elwood, Adolfo Matamoros, John Wallace, Dawn Lehman, Jon Heintz, Andrew Mitchell, Mark Moore, Michael Valley, Laura Lowes, Craig Comartin, and Jack Moehle.

On behalf of the Editorial Board, Editor Polat Gulkan wrote, “The authors did an outstanding job of improving the very important ASCE 41 document, given recent knowledge, testing, and experience. This paper has made a big impact on practice and is already well known to the profession. We judge it to be an outstanding contribution to seismic hazard mitigation because the document that it describes blends the latest experimental data and empirical models for the performance assessment of reinforced concrete structural components. Its technical quality and succinct narrative make it possible to understand the justifications for the recent changes introduced for performance criteria beyond FEMA 356. It addresses a broad audience. The paper had been marked by all of its reviewers as a possible candidate for this award.”

Four Outstanding Paper authors accepted their awards at the 2009 Annual Meeting in Salt Lake City: John Wallace, Jack Moehle, Adolfo Matamoros, and Craig Comartin. Behind them is EERI President Farzad Naeim (photo: M. Lew).
News of the Institute

**Lynch Awarded 2008 Shah Family Prize**

The Shah Family Innovation Prize Selection Committee awarded the 2008 prize to Professor Jerome Lynch of the University of Michigan in recognition of his exceptional leadership as a researcher, educator, and innovator in the field of remote sensor technologies for the seismic protection of large-scale civil infrastructure systems.

Lynch’s work in wireless sensing represents a significant paradigm shift for the earthquake risk management field for three important reasons:

1. Wireless sensors eradicate the need for high-cost wiring resulting in affordable monitoring systems defined by high sensor densities;
2. Wireless sensors include computational resources that facilitate data interrogation directly at the sensor; and
3. Wireless sensors can be used with special control devices to limit damage to structures during earthquakes, thereby contributing to the reduction of global earthquake risk.

A revolutionary aspect of his wireless sensor work is the inclusion of automated data interrogation algorithms within each wireless sensor that can infer potential damage in a structure shortly after a seismic event.

More recently, Lynch has extended his research portfolio by exploring a new generation of materials created at the nano-scale using the tools and processes of the nanotechnology domain. He co-founded the successful start-up Sensametrics, which currently offers low-cost wireless sensing and decision support solutions to risk management and insurance professionals. Selected as Professor of the Year by the ASCE Student Chapter at the University of Michigan in 2005, Professor Lynch's contagious passion for earthquake engineering has positively impacted students and practicing engineers alike.

In response to news of the award, Lynch wrote, “As a graduate student at Stanford, Professor Shah was a role model for me because he exemplified the role of the innovator and the entrepreneur within the earthquake engineering field. As a result, being selected as the recipient of this year’s Shah Family Innovation Prize is a great honor which I will always remember.”

Endowed by a generous gift from the Haresh Shah family, the Shah Family Innovation Prize is a cash award granted to younger professionals and academics. For information about the selection committee and past prize recipients, visit [http://www.eeri.org/home/honors_shah_innovation.html](http://www.eeri.org/home/honors_shah_innovation.html).

**DeJong of MIT Wins Graduate Student Paper Competition**

Matthew J. DeJong, a graduate student and research assistant at the Massachusetts Institute of Technology, captured the top prize in EERI’s graduate student paper competition with his paper, “Redefining the Vulnerability of Rocking Structures to Horizontal Ground Motion.” DeJong received a travel grant to present his paper at the 2009 Annual Meeting.

DeJong’s paper addresses the fundamental behavior of rocking structures by investigating the rate of energy input from horizontal ground motion. This perspective reveals that the conventional assumption about initial at-rest conditions is unsafe and identifies the factor of “rocking resonance.” Furthermore, the ability of multiple impulses to either reduce or amplify the rocking response demonstrates the need for a statistical assessment of rocking stability during earthquakes. DeJong applies given intensities of an array of past earthquakes to determine the overturning probability of the rocking block and the rocking arch. The results emphasize the time dependence of the rocking response and the merits of his approach.

To receive a PDF of the paper, e-mail a request to [eeri@eeri.org](mailto:eeri@eeri.org).
Robin McGuire Gives 2009 Joyner Lecture

At the 61st EERI Annual Meeting, EERI member Robin K. McGuire, founder of Risk Engineering of Boulder, Colorado, delivered the 2009 William B. Joyner Memorial Lecture, entitled “Earthquakes, Seismic Hazard, and Performance-Based Design.” McGuire, a past director of EERI and a past president of the Seismological Society of America (SSA), has spent his career working at the science-engineering interface. He first developed and published many of the methods taken today as requirements for advanced probabilistic seismic risk analysis, including probabilistic analysis at multiple frequencies to calculate a uniform hazard spectrum, development of epistemic uncertainties in parameters such as maximum magnitude, treatment and mapping of epistemic uncertainties, derivation of a random vibration model to predict earthquake ground shaking, deaggregation of seismic hazard to identify major contributors to hazard, and concepts of seismic risk to a lifeline system, rather than to an aggregate set of sites.

McGuire indicated in his lecture that basing the design of facilities on their possible performance during future earthquakes is a rational way to make decisions regarding seismic safety. He discussed how these decision processes must be explicit and quantitative in order to avoid biases. He covered two examples of applying explicit, quantitative processes: in the seismic design of nuclear power plants and in the proposed design of commercial buildings using building codes. Both examples depend on well-founded characterizations of future earthquake characteristics, including an assessment of uncertainties.

McGuire holds degrees in structural engineering from MIT and the University of California, Berkeley. For 30 years he has been consulting in seismic hazard analysis, earthquake engineering, and the application of probabilistic methods to engineering problems. McGuire has also developed earthquake hazard software that is used around the world in engineering, insurance, risk management, government, and research for seismic hazard estimation. More than 100 of his papers and articles on these topics have been published in technical journals or as technical reports. He has conducted seismic hazard analyses at sites of major engineering facilities at over 100 locations within the U.S. and at over 30 locations in foreign countries, in a range of technical environments.

McGuire’s was the sixth annual lecture given in honor of Bill Joyner for his distinguished career at the U.S. Geological Survey and his abiding commitment to the exchange of information at the interface of earthquake science and earthquake engineering. The lecture was established by SSA in cooperation with EERI. McGuire will give the lecture again at SSA’s April 2009 Annual Meeting in Monterey, California. It will also be published in Earthquake Spectra and Seismological Research Letters. For more information, visit http://www.seismosoc.org/about/joyner_fund.html.

Site and Urban Design for Security Now in Print

An EERI-FEMA publication entitled Site and Urban Design for Security: Guidance against Potential Terrorist Attacks (FEMA 430) is now available in print. Its principal authors are EERI Honorary Member Christopher Arnold of Buildings Systems Development and Mary Ann Lasch of Gensler Architects. This publication provides information and design concepts for the protection of buildings and occupants. It addresses a range of security-related design issues, including the evolution of site security design, the FEMA risk assessment process, the community context, and site perimeters. The intended audience includes the design community of architects, landscape architects, engineers and other consultants, building owners and managers, and state and local government officials. FEMA 430 is part of the Risk Management Series that addresses security issues in high-population private-sector buildings. It is a companion to the Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings (FEMA 426), which provides an understanding of the assessment of threats, hazards, vulnerability, and risk, and the design methods needed to improve protection of new and existing buildings and the people occupying them.

Hardcopies can be ordered by calling 800/480-2520 M-F: 8:00 am-5:00 pm Eastern Standard Time or faxing the FEMA Publication Warehouse. Order forms can be downloaded from http://www.fema.gov/library/docs/Blank Publication Order form IRL.doc.
News of the Profession

Lori Dengler Awarded 2009 Alquist Medal

During the 2009 Annual Meeting, EERI member Lori Dengler, Professor in the Department of Geology at Humboldt State University, received the 2009 Alfred E. Alquist Medal for Outstanding Achievement in Earthquake Safety given by the Earthquake Safety Foundation. Lori was recognized for her outstanding scholarship, major contributions to the development of the National Tsunami Hazard Mitigation Program, and long-standing advocacy of earthquake and tsunami preparedness. Her efforts have made California a safer and more resilient state.

Lori received a Ph.D. in Geophysics in 1979 from the University of California, Berkeley, and has been on the geology faculty at Humboldt State University for 29 years. She was selected by the university as Scholar of the Year for 2008. She has authored many publications in the areas of the historic seismicity of California’s north coast, earthquake intensity studies, the application of seismic refraction to surficial processes, and earthquake and tsunami hazard mitigation. An international authority on tsunamis, she has served on post-tsunami survey teams including investigations of Crescent City (2006), Indonesia (2005), Southern Peru (2001) and Papua New Guinea (1998).

Lori was a member of the team that developed the National Tsunami Hazard Mitigation Program in 1995. She authored the program’s Strategic Implementation Plan for Mitigation Projects in 1998. In 2006, she was selected as a panelist to provide guidance regarding the program’s governance and strategic objectives for the ensuing five years. In 2007, she was co-convenor of a National Science Foundation panel charged with examining current tsunami studies and recommending future directions of tsunami research in the United States. Lori was the first recipient of NOAA’s Richard Hagemeyer Tsunami Mitigation Award for her leadership role in the Redwood Coast Tsunami Work Group (RCTWG) and her significant contributions to both tsunami science and tsunami public education.

As founder and director of the Humboldt Earthquake Education Center, Lori has served California’s coastal communities as an enthusiastic advocate for earthquake and tsunami public education. She is the principal author of “Living on Shaky Ground,” an illustrated earthquake and tsunami survival guide tailored to California’s north coast but applicable statewide. In her capacity as scientific advisor to the RCTWG, she collaborated with NOAA’s National Weather Service, the California Emergency Management Agency (CalEMA), county emergency management agencies, and other local organizations to conduct California’s first “live code” tsunami warning test in March 2008 designed to ensure that the Emergency Alert System will function as intended when a tsunami warning is issued. She was an incorporating member of the Board of Directors of the Cascadia Region Earthquake Working Group, and served on the Tsunami Safety Subcommittee of the California Seismic Safety Commission. She received the California Emergency Services Association (CESA) Gold Award for contributions to emergency services in the public sector. On behalf of the RCTWG, she received the 2009 WSSPC Award in Excellence in the category of Innovation.

News of the Institute

Special Recognition Award to Morelli

EERI Honorary Member Ugo Morelli was given a 2009 Special Recognition Award during the EERI Annual Meeting for his abiding commitment to earthquake loss reduction during his federal government service, especially related to the development of recommended standards and materials for the design and construction of new buildings and to the rehabilitation of existing buildings.

In response to news of the award, Morelli wrote, “I am deeply moved and thrilled at the same time by... the Special Recognition Award that EERI has bestowed on me. I accept it with humbleness and with the strong conviction that it really belongs to scores of EERI members. They were the ones who provided me with the wise counsel, technical expertise, and strong support that made possible the significant strides that in about a generation this nation has made in the design and building of structures that can better resist earthquake forces. Please convey to them my sentiments.”

Until his retirement at the end of January 2003, Morelli was a policy manager in the Federal Emergency Management Agency (FEMA), where he was a leading proponent continued on next page
News of the Membership

Poland Elected to NAE

EERI Past President and Honorary Member Chris Poland, Chairman and CEO of Gold Subscribing Member Degenkolb Engineers, was elected to membership in the National Academy of Engineering (NAE) in an announcement made in February. Induction into the NAE is among the highest professional distinctions for an engineer. Poland was recognized for his “leadership in the development of performance-based design procedures and standards for evaluating seismic events and rehabilitating buildings.”

“I am honored to be elected into this highly regarded institution,” said Poland. “I will continue to uphold the values of education, innovation, and scientific integrity that the Academy represents as I continue to advocate for seismic safety worldwide.

Poland’s structural engineering career spans more than 30 years and began at Degenkolb Engineers. He is currently chair of both the congressionally mandated Advisory Committee to the National Earthquake Hazards Reduction Program and the Advisory Committee on Structural Safety of Department of Veterans Affairs (VA) Facilities. He was chair of the 100th Anniversary Earthquake Conference in San Francisco in April 2006. He serves as the chair of the American Society of Civil Engineers Seismic Rehabilitation of Existing Buildings Standards Committee, which recently completed ASCE 31 and ASCE 41, standards for the evaluation and rehabilitation of existing buildings. He also serves on the Board of Directors of the San Francisco Urban Planning Association (SPUR). Poland was the 2006 recipient of the Alfred E. Alquist award from the California Earthquake Safety Foundation and was the 2008 SSA/EERI Joyner Lecturer.

Recognition Award to Morelli

continued from previous page

of the National Earthquake Hazards Reduction Program (NEHRP). He continues to provide valued counsel to the NEHRP program. In 1981, he became the manager of an extensive program that has developed and disseminated a large number of nationally applicable engineering resource documents on seismic safety of new buildings. Companion publications dealing with societal problems were also produced for a broad audience, including building owners and other decision makers. The technology embodied in these documents has diffused widely into the design and construction practices of this country, and was extensively adopted by the former three major model building codes, and, more recently, by the International Code Council.

The last 19 years of his activities were concentrated almost exclusively on the management of the FEMA program dealing with the seismic safety of existing buildings in both the private and public sectors. EERI was pleased to have been part of the initial joint venture in 1985 that laid the groundwork for this program. With his retirement from FEMA in 2003, EERI awarded him Honorary Membership for his contributions as a leading proponent of earthquake hazard reduction programs.

News of the Institute

First EERI Student Chapter in Europe

EERI member Gian Paolo Cimellaro, assistant professor in the Department of Structural & Geotechnical Engineering at the Politecnico di Torino in Italy, has established the first EERI student chapter in Europe, named the EERI PoliTo Student Chapter. Gian Paolo had been an EERI student member while studying for his Ph.D. at the University at Buffalo (SUNY), and returned to Italy in December 2008. He has increased the interest of students of Politecnico di Torino in earthquake engineering. T. T. Soong of the University at Buffalo (SUNY) and EERI member Filip Filippou of UC Berkeley gave seminars there in March.

Student Travel Grant Recipients

The following students received travel scholarships, funded by the Federal Emergency Management Agency, to help them attend the 2009 EERI Annual Meeting:

Azadeh Alipour, UC Irvine
Juan Arias, UN Reno
Lucas Carr, UT Austin
Ioannis Christovasilis, UB SUNY
Fabian Consuegra, Purdue University
Seda Dogruel, UB SUNY
Anthony Friedman, Washington University St Louis
Andy Kizic, University of Memphis
Dimitrios Konstantinidis, UC Berkeley
Benjamin Kosbab, Georgia Tech
Albert Kottke, UT Austin
Anna Lang, UC San Diego
Selina Lee, Cornell University
Anne Lemnitzer, UCLA
Remy Lequesne, University of Michigan
Karthik Ramanathan, Georgia Tech
Behrouz Shafei, UC Irvine
Petros Sideris, UB SUNY
Matthew Speicher, Georgia Tech
Obituary

F. Robert Preece, 1922-2009

EERI Honorary Member and past vice president F. Robert (Bob) Preece passed away on March 18, 2009. Bob devoted himself to increasing seismic safety through his participation in building code development and professional associations. The public has benefited from his building materials expertise, particularly steel and concrete, as he wrote extensively in technical publications on their design and performance. He served terms as president of the Structural Engineers Association of California (SEAOC), the Consulting Engineers Association, and the Applied Technology Council.

Following service in World War II, Bob earned BS and MS degrees in civil engineering from the University of Nevada and Stanford University, respectively. During nine earthquake reconnaissance investigations over a 37-year period, he worked alongside other giants of the field, such as EERI past presidents Henry Degenkolb and Frank McClure. After working for 18 years for Testing Engineers, Inc., he founded his own firm of Preece/Goudie & Associates in 1978. Among his major projects were San Francisco’s Transamerica Pyramid, the Hyatt Regency, and the Embarcadero Center. The firm became Preece, Goudie, and Issa in 1997. His legacy is written on the skyline of San Francisco.

Although Bob had been retired eight years, he continued advising Caltrans, as a member of its Seismic Advisory Committee, in improving the design, repair, and replacement of major bridges throughout California, including the Oakland-San Francisco Bay Bridge now under construction.

Bob is survived by his wife Ann, a son, a daughter, and three grandchildren.

Concrete Coalition Update

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participating in a survey of what you think are the top ten deficiencies, visit http://www.concretecoalition.org/?page_id=192. Once the most critical building deficiencies for nonductile concrete buildings have been identified, the Coalition is considering developing a basic analysis tool for individual buildings to give building owners an idea of whether they need to invest in a more comprehensive building evaluation. Such a procedure would likely be tested in Los Angeles first.

Pilot Cities: In preparation for the volunteer workshops that were held in Los Angeles and San Francisco in late January and February 2009, several members of the Coalition steering committee gathered data on individual jurisdictions. The city of Los Angeles is a unique example, because a systematic building inventory for nonductile concrete buildings was performed as part of the above-mentioned Grand Challenge project. This project estimates that there are approximately 1800 unretrofitted buildings in the city limits, including hospital and school buildings.

Other pilot jurisdictions, including the cities of Berkeley, Long Beach, San Francisco, and Alameda, used a variety of estimating techniques to arrive at their numbers. Presentations describing how each volunteer approached his or her jurisdiction are on the project website (http://www.concretecoalition.org/?page_id=192).

Volunteer Workshops: Close to 60 people attended each of the volunteer workshops, in Los Angeles at the MACTEC offices and in San Francisco at the SGH offices. After describing the various approaches used by the pilot cities to estimate the number of pre-1980 concrete buildings, participants were asked to volunteer to develop these estimates for one or more jurisdictions. More than 30 volunteers have signed up to date in southern California and 40 in northern California. A simple online form has been developed to store the “bottom line” estimates. Volunteers are encouraged also to upload supporting files to demonstrate how they arrived at these numbers. David Pomerleau (david.pomerleau@idsse.com) of IDS Group in Irvine and David McCormick (dlmccormick@sgh.com) of SGH in San Francisco are volunteer coordinators for southern and northern California, respectively. With the assistance of EERI staff and members of the project steering committee, David Bonowitz will be organizing the data, helping interpret statewide databases with the estimates coming from individual jurisdictions.

As volunteers start gathering information, we will share techniques and preliminary data as appropriate. To see the jurisdictions for which we have volunteers, visit http://www.concretecoalition.org/?page_id=260&page=california_counties. If you are interested in volunteering to develop estimates, you can either contact one of the volunteer coordinators or EERI staff person Marjorie Greene (mgreene@eeri.org).
News of the Membership

Maragakis Named Dean at UNR

EERI member Emmanuel (Manos) Maragakis, professor at the University of Nevada at Reno, has been selected to be the UNR’s Dean of the College of Engineering, based on a national search. Maragakis had been serving as interim dean since July. He joined UNR in 1984 and has served for 14 years as chairperson of the Department of Civil and Environmental Engineering. Maragakis has played an important role in the college’s growth, establishing a strong reputation in national and international research circles in earthquake response of buildings and bridges. His department’s Center for Civil Engineering Earthquake Research has received recognition from around the world. The multimillion dollar state-of-the-art laboratory has developed unparalleled capacities in the field of bridge engineering. Faculty members have conducted numerous earthquake simulations on the bi-axial shake tables within the lab, helping to improve the design and structural stability of large-scale structures throughout the nation. Maragakis has received numerous National Science Foundation grants for research. His most recent accomplishment includes a Grand Challenge project on the seismic response of nonstructural systems. Maragakis received his undergraduate degree from the National Technical University of Athens, Greece, and his master’s degree and Ph.D. from the California Institute of Technology.

Honor for Padgett

EERI member Jamie Padgett, assistant professor in civil and environmental engineering at Rice University in Houston, Texas, was named one of the New Faces of Engineering 2009 by the National Engineers Week Foundation, which asks its members annually to nominate colleagues 30 years old and younger for this recognition. Padgett was nominated by the American Society of Civil Engineers. She evaluates bridge infrastructure vulnerability to multiple hazards, including aging, hurricanes, and seismic events. Her research also assesses effective rehabilitation measures and aims to develop new models for predicting coastal bridge reliability and adapting critical infrastructure to climate change. Padgett teaches graduate and undergraduate courses in structural analysis, bridge engineering, and extreme events. She earned her bachelor’s degree in civil engineering from the University of Florida in Gainesville and her Ph.D. from the Georgia Institute of Technology in Atlanta. Padgett was awarded the 2006-2007 EERI/NEHRP Graduate Fellowship in Earthquake Hazard Reduction while she was a Ph.D. candidate.

Mexico Honors Jirsa and Wight

In October 2008, EERI members James O. Jirsa of the University of Texas and James K. Wight of the University of Michigan were elected as International Corresponding Members to the Academia de Ingenieria of Mexico. Their selection was based on their many research contributions to the earthquake-resistant design of reinforced concrete buildings and the repair and rehabilitation of concrete structures damaged during the 1985 Mexico City earthquake.

Publications

Fundamentals of EQ Engineering

Fundamentals of Earthquake Engineering by EERI member Amr Elnashai and Luigi Di Sarno is a 366-page hardcover book recently published by John A. Wiley and Sons. It combines aspects of engineering seismology and structural and geotechnical earthquake engineering to provide the essentials required for understanding of response of structures to ground motion. The authors relate structural damage states to societal consequences and expectations, through the fundamental response quantities of stiffness, strength, and ductility. The book supports graduate teaching and learning, introduces practicing structural and geotechnical engineers to earthquake analysis and design problems, and serves as a reference book for further studies.

The book can be ordered for $140 from www.wiley.com/go/elnashai, which also contains a comprehensive set of slides illustrating the chapters and appendices, as well as a set of problems with solutions and worked-through examples, once the book is bought.

Community Recovery

The Public Entity Risk Institute (PERI) recently published Managing for Long-Term Community Recovery in the Aftermath of Disaster. The book is a guide to help local officials and community leaders understand what is required for long-term recovery following a disaster. Co-authored by EERI members Daniel Alesch and Lucy Arendt along with James Holly, the book distills the experience of dozens of communities to determine the elements that make a community viable in the long term. For additional information and to place an order ($35), visit www.riskinstitute.org/bookstore.
Opportunities

NIST Earthquake Engineering Positions
The Department of Commerce’s National Institute of Standards and Technology (NIST) Building and Fire Research Laboratory (BFRL) seeks an earthquake engineering research team leader and new earthquake engineering research staff members in support of its role in the National Earthquake Hazards Reduction Program (NEHRP). NIST seeks a senior engineer for the team leader position, and both senior and junior engineers for the research positions, preferably with advanced degrees in the earthquake engineering field or equivalent experience in research and practice. Successful applicants must exhibit a strong technical background in areas associated with seismic risk.

The team leader will work directly with the NEHRP director to research, develop, and implement new earthquake risk mitigation measures through both in-house research and extramural efforts. The successful applicant must exhibit leadership skills and foster teamwork among diverse participants. For more information, visit http://www.nehrp.gov/news/announcement.htm.

The earthquake engineering research staff members will participate in comprehensive in-house research programs and will manage extramural research efforts. For more information, visit http://www.nehrp.gov/news/announcement2.htm.

Caltech Seeks Postdoctoral Scholar
The Earthquake Engineering Research Laboratory (EERL, http://ce.caltech.edu) at Caltech invites applications for a post-doctoral scholar position in earthquake engineering. Applicants must hold a Ph.D. in civil engineering or a related field. The successful candidate will conduct research in high-performance computing applications to the nonlinear analysis of tall building or long-span bridge response under strong ground motion. Start date must be no later than September 1, 2009. Candidates should submit a cover letter, a curriculum vitae, a research statement, copies of two peer-reviewed journal publications, and the names and contact information of three references to EERI member Swaminathan Krishnan, email: krishnan@caltech.edu.

Visit http://krishnan.caltech.edu to learn more about the research being conducted within Krishnan’s group.

Announcements

Geo-Engineering Lecture Series
Four geo-engineering groups are sponsoring the 27th Annual Geo-Engineering Distinguished Lecture Series on the afternoon of May 8, 2009, to be held in the Bechtel Building’s Sibley Auditorium at the University of California Berkeley. The three lecturers are Juan Pestana (EERI member) on “New Challenges in Geomechanics: The Role of Modeling in Geotechnical Engineering Practice,” Iraj Noorany on “Performance-Based Design and Specifications for Structural Fills,” and Tom O’Rourke (EERI member) on “Geohazards and Large Distributed Systems.”

Advanced registration by April 24 is required. For more information and to register, visit http://peer.berkeley.edu/events/2009/geoengineering_lecture/index.html.

Publication

FEMA-NEHRP Publications Program
As part of its SeismicWaves series, the National Earthquake Hazards Reduction Program recently published a short report entitled Getting the Word Out to Save Lives and Property (visit http://www.nehrp.gov/pdf/SeismicWavesOct08.pdf). It describes the FEMA-NEHRP Publications Program, which consists of approximately 80 publications grouped under four audience categories: individuals and homeowners, teachers and kids, community planners and public policy makers, and building professionals and engineers.

Since the early 1980s, FEMA has supported the development of successive editions of NEHRP’s primary vehicle for disseminating new technologies and research results: the NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures.

Two of the seismic rehabilitation guidelines developed by FEMA have become national consensus standards that are now referenced in model building codes. Several other documents present policy and program considerations for mitigating seismic risk among existing buildings.

Many program publications are now available as downloadable files or on CDs. The program is also packaging materials specifically for different segments of its target audience.

Fyfe Company: The mission of Fyfe Company, based in San Diego, California, is to provide state-of-the-art solutions for today’s structural problems. With thousands of completed projects in every region of the world, Fyfe provides innovative construction products and personalized technical support to meet the needs of engineers, contractors, and owners in the most efficient, cost-effective manner. Engaged in continuous research and innovation, Fyfe Company is comprised of engineers, designers, material specialists, material manufacturers, and project support personnel. Fyfe Company manufactures the Tyfo Fibrwrap Advanced Composite System, the first externally bonded fiber reinforced polymer (FRP) system ever used for the strengthening, repair, and restoration of masonry, concrete, steel, and wooden structures. The Tyfo Fibrwrap systems are specialized carbon, glass, aramid, and hybrid fabrics combined with resins which, in unique combination, create the tested and proven advanced composite system. Tyfo Advanced Composites are used for seismic retrofitting, pipe rehabilitation, structural preservation, comprehensive force protection, blast mitigation, and environmental protection. Tyfo Systems have performed as designed in major urban earthquakes in Taipei, Los Angeles, Seattle, and San Salvador. For more information, visit www.fyfeco.com.

International Code Council (ICC): In 1994, BOCA (Building Officials and Code Administrators), ICBO (International Conference of Building Officials), and SBCCI (Southern Building Code Congress International) created ICC to develop a single set of comprehensive, coordinated model construction codes that could be used throughout the United States and around the world. In 2002, at a joint annual conference, members of BOCA, ICBO, and SBCCI voted to consolidate services, products, and operations into one member service organization. ICC’s mission is to provide the highest quality codes, standards, products, and services for all concerned with the safety and performance of the built environment. The merger enabled ICC to direct collective energies toward wider code adoption, better code enforcement, and enhanced membership services. With headquarters in Washington, D.C., ICC offers unmatched technical, educational, and informational products and services in support of the International Codes, with more than 250 staff members at 16 offices throughout the United States and in Latin America. A complete family of 13 construction codes is available. ICC has more than 300 chapters with members representing all construction disciplines. For more information, visit http://www.iccsafe.org/.

Learning from Earthquakes
February 11 M7.2 EQ in Indonesia

A shallow earthquake struck near Kepulauan Talaud, Indonesia, on February 11, 2009, with reverse faulting on the plate-boundary system separating the Philippine Sea and Celebes Sea basins, prompting Indonesia’s geophysics agency to issue a tsunami alert, which was later revoked. In northeastern Indonesia, motions of numerous small plates are accommodating large-scale convergence between two plates. The Philippine Sea plate moves west-northwest with respect to the Sunda plate at a velocity of about 62 mm/year. Locally, arc-arc collision is occurring between the Sangihe and Halmahera micro plates, wedging between them the Molucca Sea micro plate, which subducts beneath both (i.e., to the east and west) and forms an inverted-U-shaped seismic zone. This unique tectonic setting is the only global example of an active arc-arc collision consuming an oceanic basin via subduction in two directions.

The earthquake occurred approximately 30 km off the western coast of the Pulau Salebabu (Indonesia). At least 36 people were injured, eight of them seriously, with open head wounds from collapsing walls. Hundreds of homes and buildings were damaged, including office buildings, schools, and health clinics. The main district hospital partially collapsed, forcing patients to be moved to local clinics. Since 1986, there have been two earthquakes with magnitude greater than 7 in this region.
**Announcements**

**Tall Buildings Session**

The Council on Tall Buildings and Urban Habitat (CTBUH) is organizing a session on the Performance-Based Seismic Design (PBD) of Tall Buildings at the 2009 SEI/ASCE Structures Congress (April 30-May 2, 2009) in Austin, Texas.

The session will include a presentation by EERI Board member Andrew Whittaker on "Tall Building Design: CTBUH Recommendations and Application to Regions of Low and Moderate Seismic Hazard." Other presentations will cover "Tall Buildings from Seattle to San Diego: Recent Advances in PBD," "International PBD Practice for Tall Buildings," and "Tall Buildings — Perspectives of a Building Official."

For more information, visit [http://www.ctbuh.org/](http://www.ctbuh.org/) and click on Events.

**Open Risk Analysis Conference**

The International Conference on Open Risk Analysis (ICORA) will be held on June 12-13, 2009, at the University of Cambridge in the United Kingdom, chaired jointly by EERI members Charles Scawthorn and Robin Spence. ICORA will include researchers from Europe, the USA, and Japan, from a variety of hazards, risk, and finance backgrounds.

The founding meeting of the Alliance for Global Open Risk Analysis (AGORA) was a workshop in February 2007, where current trends and future research needs were identified. Presentations from that workshop are available at [www.risk-agora.org](http://www.risk-agora.org). Since then, AGORA has grown to a membership of several hundred.

The conference will include plenary and parallel sessions, with presentations on current initiatives, open data interchange needs, ORA users and their needs, software initiatives, vulnerability data collection and databases, and ORA business models.

Limited funding is available for overseas participants. For more information, visit [http://www.risk-agora.org/](http://www.risk-agora.org/).

**Nonlinear Dynamics and EQ Prediction School**

The Abdus Salam International Centre for Theoretical Physics (ICTP), in collaboration with the Department of Earth Sciences of the University of Trieste, will host an Advanced School on Nonlinear Dynamics and Earthquake Prediction, in Trieste, Italy, September 28-October 10, 2009.

The school will cover recent developments in the fundamental studies of the evolution and dynamics of the Earth’s lithosphere, and in approaches to applied problems, such as earthquake prediction and estimation and mitigation of possible seismic hazards. The format includes lectures and practical exercises. For an application to participate, visit [http://agenda.ictp.it/smr.php?2060](http://agenda.ictp.it/smr.php?2060). The application deadline is May 28, 2009.

Scientists and students from all countries that are members of the UN, UNESCO, or IAEA can attend the school, which will be conducted in English. Although the main purpose of the ICTP is to help researchers from developing countries, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend. A degree in physics, mathematics, geophysics (theoretical or computational), computer science, or a similar discipline is required.

There is no registration fee. A limited number of travel grants are available for researchers from developing countries under age 45.

**Publication**

**Utah Version of Putting Down Roots**

The Utah Seismic Safety Commission (USSC) has released the earthquake hazards and preparedness publication *Putting Down Roots in Earthquake Country — Your Handbook for Earthquakes in Utah*. The *Roots* handbook outlines why Utah is seismically active, areas where strong earthquake shaking is expected to occur, and how earthquakes cause damage. In addition, it includes seven steps to follow to reduce your risk from earthquakes, and what you should know about the potential financial impacts of earthquakes. The handbook will be useful for Utah’s families, businesses, and schools, as well as planners and policy makers.

The USSC developed and published the *Roots* handbook together with the Utah Division of Homeland Security, the Utah Geological Survey, the University of Utah Seismograph Stations, and the Structural Engineers Association of Utah, in cooperation with the U.S. Geological Survey (USGS) and the Federal Emergency Management Agency. The handbook is adapted from the California editions of *Roots* published by the USGS and Southern California Earthquake Center.

To download a PDF of the handbook, visit [http://ussc.utah.gov/](http://ussc.utah.gov/).
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.

2009

APRIL

8-10. Annual Meeting of the Seismological Society of America, Monterey, CA. Info: http://www.seismosoc.org/meetings/meetings.html (7/08)

17. 3rd in Khan Lecture Series, Bethlehem, PA. Info: www.lehigh.edu/frkseries (12/08)

30-May 2. Tall Bldg Session at SEI/ASCE ASCE Structures Conf., Austin, TX. See page 10. (4/09)

MAY


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

JUNE


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


JUNE

14-16. 3rd in Khan Lecture Series, Bethlehem, PA. Info: www.lehigh.edu/frkseries (12/08)

30-May 2. Tall Bldg Session at SEI/ASCE ASCE Structures Conf., Austin, TX. See page 10. (4/09)

AUGUST


SEPTEMBER


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


OCTOBER


DECEMBER


2010

FEBRUARY


MAY

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

JULY


AUGUST

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

Annual Graphics Competition Winners

The results of the Second EERI Annual Graphics Competition were announced during EERI’s Annual Meeting by Arzhang Alimoradi, chair of the Younger Members Committee, which organized the competition. First place went to a three-member team from the structural engineering firm of Tipping Mar + Associates in Berkeley, California, consisting of EERI Member Steve Tipping, Barry Ralphs (CAD Manager), and Mike Korolyk. Tipping attended the meeting to receive the award on behalf of his team. Second place finishers were EERI members David J. Leeds and Bob Reitherman, along with Darryl Wong and Reed Helgens, of CUREE for their 2008 CUREE Calendar: Seismic Philately. Third prize was awarded to Tom Schacher of the Swiss Society for Earthquake Engineering and Structural Dynamics, for both his Bhatar poster and for his illustrations for the Confined Masonry Training Manual.

The first-place project, Animation of a Retrofit Design for a Building, concerned a 26-story steel frame structure built in the early 1900s that has a number of architectural aspects making it worth preserving as an historical landmark, including a marble-colored terra-cotta façade and decorative sculptures. The four-minute animation highlights the existing structural system and the proposed construction sequence for a seismic retrofit scheme comprised of a single post-tensioned, reinforced concrete core. The post-tensioning offers a significant benefit as a partial substitute for mild steel reinforcement, delivering centering behavior without sacrificing strength or significant ductility. The Tipping Mar team studied and tested these benefits, using nonlinear time-history analysis and a variety of software packages to create the final animation, including AutoCAD2008 (model building), 3DS Max 2008 (animation) and CSi Perform 3D (nonlinear analysis).

EERI extends thanks to the panel of judges: Armen Der Kiureghian, Farzad Naeim, Ricardo Taborda, and Arzhang Alimoradi. Acceptable categories of submissions were drawings and paintings, graphs and diagrams, symbols and mathematics, maps, photographs, engineering drawings, computer graphics, web graphics, and moving pictures.

To view the top three submissions, visit http://www.eeri.org/site/content/view/528/72/.