

EARTHQUAKE ENGINEERING RESEARCH INSTITUTE NEWSLETTER

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ISSN 0270-8337

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EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

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News of the Institute

State of the Institute

by L. Thomas Tobin, EERI President

EERI continues to be a healthy and vibrant professional organization — one that is contributing to reducing earthquake risks worldwide. I hope you are as proud as I am to be involved in an organization powered by the contributions of time and money from so many selfless and dedicated professionals.

State of the Institute: The Institute is in good shape, and the past year has been one of accomplishment and growth. I hope you will share my enthusiasm for the Institute and the accomplishments of our members and staff. The overriding value you receive as a member rests with (1) relationships you make; (2) your participation in our programs; (3) access to ideas through meetings, seminars, *Earthquake Spectra*, the *Newsletter*, LFE reports and other documents; and (4) working with colleagues to reduce earthquake risk. The Board of Directors, consisting of nine volunteers, continues to provide strategic leadership to the Institute. Board members provide insight and counsel on the affairs of the Institute, serve as liaisons with our Subscribing Members and committees, and lead strategic efforts. They are our eyes and ears among the members and the professions.

New Subscribing Members: EERI is fortunate to have 54 Subscribing Members. They make many of our accomplishments possible through the hours donated by their employees and their cash contributions. We have the following seven new Subscribing Members: AISC (American Institute of Steel Construction), COSMOS (Consortium of Organizations for Strong-Motion Observation Systems), GeoHazards International, Gilsanz Murray Steficek LLP, Nanometrics, Paul C. Rizzo Associates, and Renaissance Re Risk Sciences Foundation.

During the past year my two interrelated objectives have been to serve our members and strengthen the Institute.

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2012 Annual Meeting PDFs, 2013 Venue

To access PDFs of the PowerPoint slides of most of the presentations given at the 2012 EERI Annual Meeting/National Earthquake Conference in April, visit <http://2012am.eeri.org/conference-presentations>. The presentations are organized by session, in order of their delivery at the conference.

Annual Meeting 2013: Save February 12-15

Mark your calendar! The 2013 EERI Annual Meeting will be held February 12-15 at the Grand Hyatt in Seattle, Washington. Located in the heart of

Seattle's thriving retail and theater district, the Grand Hyatt is steps from Pike's Place Market, the waterfront, art galleries, restaurants, and the Space Needle. Be on the lookout for more information in future newsletters and on the EERI web site.



Grand Hyatt in Seattle

News of the Institute

Shah Innovation Prize: Veronica Cedillos

The 2011 Shah Family Innovation Prize has been awarded to Veronica Cedillos, a project manager at Geo-Hazards International (GHI). She earned civil engineering degrees at M.I.T. (B.S. 2005) and Stanford University (M.S. 2008). Upon graduating from Stanford, she joined GHI, where she has progressively increased her responsibilities and now leads two challenging and innovative projects — reducing hazard risk in Padang, Indonesia, and promoting seismic safety in a rural village in Peru.

With the heart of an entrepreneur, Cedillos has the confidence and abilities to develop effective working relationships with all sorts of organizations and people — ranging from top government officials, to university professors, to local community members. She is also a strategic thinker, who can stay focused on the long-range goals of a project while attending to short-term planning and day-to-day operations.

Much more than an engineer applying her technical skills, Cedillos immerses herself in the communities she serves. She is willing to live in demanding conditions (e.g. minimal hot water, occasionally functioning toilets, simple food, an unheated

bedroom at 9,000 ft. elevation). In Indonesia, on Sundays — her single “day of rest” — she often teaches the violin to local children.



Veronica Cedillos

The Shah Prize honors individuals age 35 or under for creativity, innovation and an entrepreneurial spirit in earthquake risk mitigation and management. For more information, visit <http://www.eeri.org/about-eeri/honors-awards/shah-family-innovation-prize/>.

2012 Bolt Medal Goes to Abrahamson



Norman Abrahamson, chief scientist in the Geosciences Department at the Pacific Gas & Electric Company (PG&E), has been chosen as the 2012

recipient of the Bruce Bolt Medal, which is awarded jointly by the Seismological Society of America (SSA), the Consortium of Organizations for Strong-Motion Observation Systems (COSMOS), and EERI. The medal was established to recognize individuals worldwide whose accomplishments involve the promotion and use of strong-motion earthquake data and whose leadership in the transfer of scientific and engineering knowledge into practice or policy has led to improved seismic safety. Professor Bolt was recognized in his time by earthquake engineers and seismologists worldwide as *the* expert in engineering seismology.

One of Bolt’s Ph.D. students, Abrahamson co-authored pioneering papers with Bolt and is now advancing the leading edge of the field. He is arguably the world’s foremost authority on engineering seismology.

Abrahamson has become a leader in the development of ground-motion prediction equations (GMPEs) and in analyzing the statistical properties of peak parameters and their variability.

In parallel with his work at PG&E, he has consulted on many projects worldwide and, since 2003, has served as an adjunct professor at the University of California Berkeley and Davis campuses, teaching strong-motion seismology and probabilistic seismic hazard analysis. He also takes an active role in educating current practitioners. He was EERI’s Distinguished Lecturer in 2009 and spoke on the topic “The State of the Practice of Seismic Hazard Analysis: From the Good to the Bad.”

Abrahamson has served terms on the boards of directors of SSA, EERI and COSMOS. He will receive his medal in November at the COSMOS Annual Meeting.

Student Paper Competition Winners

Graduate category: Jazalyn Dukes, graduate research assistant at the School of Civil and Environmental Engineering at the Georgia Institute of Technology, captured the top prize in EERI’s Graduate Student Paper Competition with her paper, “Effect of Column Behavior on the Fragility Relationships of California Bridges.” Dukes received a travel grant to attend the 2012 EERI Annual Meeting/National Earthquake Conference.

In her paper, Dukes examines the accuracy and reliability of the fragility analysis of bridges and explores its use as a possible aid during the design process. She investigates the effect of different column models assumed during analytical modeling and the types of column behavior that may be present in California bridges. Focusing on one common class, the study showed the importance of recognizing the year of the design of a column when modeling bridges and applying the correct limit states, when conducting fragility analyses, to produce accurate results.

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Report on Research Needs from Japan and New Zealand EQs

On February 9 and 10, 2012, EERI convened a workshop with support from the U.S. National Science Foundation (NSF) to identify themes and directions for research resulting from the 2010 and 2011 New Zealand earthquakes and the 2011 Tohoku, Japan, earthquake and tsunami. The workshop steering committee identified key research themes and recommendations that are explored in the workshop report, available at <http://www.eeri.org/japan-new-zealand-nsf-rapid-workshop/>. Also available are workshop presentations and break-out group reports.

The key research themes are (1) components of resiliency; (2) the role of information technology in mitigation and response; (3) the implications of the radiological disaster; and (4) the socio-economic consequences of catastrophic events.

Key recommendations for future research include (1) support of perishable data collection; (2) establishment of an interdisciplinary digital data center; (3) advancement of modeling, computational, and analytic capabilities; and (4) support of a holistic research program on vulnerability and resilience that integrates many disciplines and researchers across the three countries.

Student Paper Competition

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Undergraduate category: Grace Parker, a student at the University of California, Los Angeles, won the undergraduate competition with her paper, "Simplified Model for the Hanging Wall Effect for Areal Source Zones." Parker received a grant to attend the 2012 EERI Annual Meeting. Her paper presents a ground motion model that can be applied after a correction is made for point-source distance. Using the 2008

Annual Graphics Competition Winners

The first-place winner of the 2012 EERI Annual Graphics Competition, as determined by earthquake professionals of all ages from different disciplines, was Guillaume Roux-Fouillet of the Swiss Agency for Development and Cooperation, Center de Competence Reconstruction en Haiti, for the 2012 Haiti Seismic Resilience Calendar entitled "Quelques règles pour construire de maisons plus solides" ("Some rules for building more solid houses"). The calendar is actually a basic construction manual. Developed in collaboration with the Haitian Ministry of Construction and Public Works, each page presents an illustration of a theme essential to seismic-resistant construction, along with some technical information and a few words to deliver a clear and relevant message. To access both French and Creole versions of the calendar, visit <http://constructiongroup.ch/node/262>.

The second place finisher was a graphic for a research project on "Seismic risk in urban systems," for which Carlos Sousa Oliveira of the Instituto Superior Tecnico, Lisbon, Portugal, was research coordinator and Hugo O'Neill was the graphic artist. The depiction of dominoes falling along a ruptured fault conveys the complex cascade of related incidents that is a potential consequence of an earthquake.

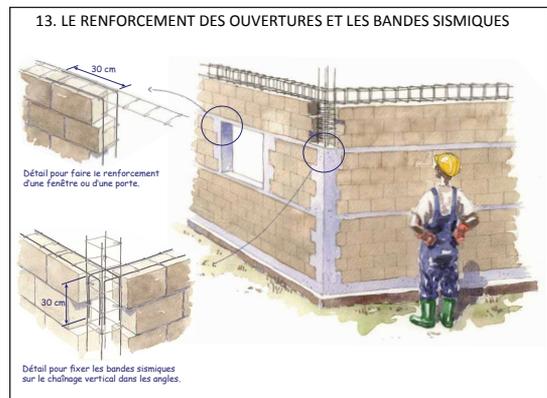
Coming in third was a video by Brad Fleming and Sri Sritharan of Iowa State University, Ames, demonstrating a full-scale field experiment that was part of a Network for Earthquake Engineering Simulation (NEES) project. The video showcases several methods for visualization, including utilization of videos, renderings, NEEShub, and animations to advance the seismic performance of pile foundations in soft clay.

To access all entries in the competition and a list of the judges, visit <http://www.eeri.org/eeri-annual-graphics-competition-entries/>. Thanks go to EERI member Michael Germeraad for organizing the judging process and overseeing the competition logistics.

Abrahamson and Silva ground motion prediction equation, she developed a model for the mean hanging wall effect, for 21 spectral periods, that depends on rupture distance, magnitude, fault dip, and shear wave velocity at the site. An exam-

ple application shows that the effect, including the hanging wall factor in areal sources, can increase the hazard by a factor of 1.5.

Contact the EERI office if you would like a PDF of either of these papers.



Cover and sample page from the 2012 Haiti Seismic Resilience Calendar.

State of the Institute

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Serving our members

Learning from Earthquakes remains one of our primary programs. Jack Moehle is leading an effort to revitalize our LFE Program to focus both on research and practice. We are forming a “resilience observatory” to focus on learning from damaging earthquakes in the context of communities and over time. Our response will continue to have solid academic and practice components; we will be prepared to respond rapidly and to coordinate the efforts of other investigators.

Earthquake Spectra continues to grow in stature and influence. We are proud that it now has the highest impact factor among 115 journals in the civil engineering category as measured by the *Journal Citation Report*. The number of manuscripts submitted continues to increase, and our peer review is completed more quickly than in other journals. We have to thank our Editor, Polat Gülkan, our Managing Editor, Elizabeth Stalnaker, the associate editors, and those of you who have served dutifully as reviewers. *Spectra* informs both academics and practitioners. This year we will publish another special issue, on the earthquake in Chile. We seamlessly changed to new contractors for peer review, online hosting, and publication. This transition will be complete with the publication of the May issue.

The World Housing Encyclopedia continues to lead to a better understanding of vernacular housing, its vulnerabilities, and ways to improve safety. This year the WHE published a report on improving the earthquake performance of stone masonry buildings. The Concrete Coalition recently received a grant from the USGS and expects to start a project supported by FEMA and Cal EMA.

We are encouraging all of our committees to become more active and to encourage broader participation.

We authorized a new committee on tsunamis headed by Lori Dengler and changed the name of our policy committee to include the word “advocacy.” The next step is for you to let us know your interests.

We now have the capability to offer PDHs that recognize members’ professional development from attending events. We will offer webinars and a technical seminar this year in multiple locations. Sharing the experience and knowledge of our members throughout the Institute is one of our most effective ways to achieve our mission.

At this year’s Annual Meeting, we initiated our Housner Fellows Program, which will invest in the future leaders of earthquake risk reduction efforts. We welcomed eight fellows who will participate in training, projects and other leadership-building activities over the next two years.

Strengthening the Institute

During the past year we moved our office within the same building. Our new space serves our needs, improves the work flow, and reduces the cost of rent. We launched a new website modernized to take advantage of improved technology and to serve members better. Later this year, there will be a new online store and a new members-only area giving members access to the Institute’s resources for free or at a discount. Also provided will be an advocacy section so you can be informed of policy issues and be supported if you wish to become involved. At the same time, we have improved our systems, security, and productivity, and cut costs.

We launched new regional chapters (see next page) and are working on revitalizing existing chapters. We now have the following ten chapters: Alaska (our first), Great Lakes, National Capitol (Washington, D.C. area), New Madrid, New York-Northeast, Northern California, San Diego, Southern California, Oregon, and Utah. Board member Ivan Wong is

working on developing new chapters in Washington state, Georgia, Hawaii, Colorado, South Carolina, British Columbia, and Boston. Regional chapters offer you an opportunity to be involved and to interact with similarly motivated colleagues on matters of interest and issues relevant to your region. Chapters help strengthen the network of professionals and facilitate the sharing of ideas only possible from interaction. Chapters can address technical issues through speakers and projects, and can organize to influence public policy. Each chapter is unique in the way it is organized and the nature of its activities. Some chapters work closely with Student Chapters. Chapters often help organize annual meetings. Each has its own personality and role in the region. We are working on providing professional development hours (PDHs) for participating in chapter professional development activities

We now have 46 student chapters, including five in foreign countries. Chapters allow undergraduate and graduate students to explore earthquake engineering as a profession, to hear from professionals, and to participate in the Student Design Competition.

We are increasing the number of members in all categories and now have almost 3,000 members. Our most significant increase is in the number of E-Affiliate members from developing countries. GeoHazards International is sponsoring the membership of 120 new members in this category. We also increased the number of Subscribing Members, whose dues are a minimum of \$3,000. New members bring new ideas and contacts and strengthen our effort to realize our mission. New members serve each other by building relationships, and new members increase our revenues and improve our financial base. Broadening our financial base is important to provide stable programs. We now

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State of the Institute

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have a Memorandum of Understanding and three project agreements with the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR) for (1) developing knowledge notes helpful to developing countries, (2) funding three Housner Fellows, and (3) supporting learning from earthquake reconnaissance activities.

The Board approved the selection of representation in Washington, D.C., to help us stay abreast of legislative issues affecting earthquake safety and allowing you to have input. Our work is to provide informed opinion and advice relative to reducing earthquake risk.

I hope you share my enthusiasm for our Institute and take up our two challenges to improve service to our members and to strengthen the Institute. You do this by becoming active in a chapter or with a committee, submitting papers to *Spectra*, telling us your views and needs, encouraging your company or agency to join EERI as a Subscribing Member, and encouraging your colleagues to join.

EERI has challenges

The National Earthquake Hazard Reduction Act, the federal statute that authorizes earthquake research and knowledge transfer programs at the National Science Foundation, the U.S. Geological Survey, FEMA, and the National Institute for Standards and Technology has not been reauthorized, and the most recent version in the U.S. House of Representatives reduces authorized spending levels. I believe this lack of support places Americans in danger, weakens our research efforts, and threatens the competitiveness of American earthquake engineering and earth sciences abroad. EERI is working for reauthorization with adequate funding.

Closing our expense/income gap is important for our long-term

health. Although we have adequate unrestricted cash reserves to fund needed programs, we are currently running at a deficit. Our goal is to continue closing that gap by broadening our sources of income, increasing membership numbers and instilling efficiencies. I hope you agree that EERI has maintained its core activities and grown in the number of members, the number

of chapters and the level of activity. Revitalizing our committees and regional and student chapters so that they engage more members and better serve you will take time and effort. Chapters are easier to run, more productive, and more fun when the number of people sharing the workload is large. We need you to help by becoming more active.

New EERI Regional Chapters

EERI is pleased to announce the recent formation of three new EERI regional chapters: National Capital (the Washington, D.C., area), New York-Northeast, and Utah. In addition, a prospective chapter in Oregon is finalizing bylaws. EERI's new IT contractor, Mortimer Smythe Designs, has developed a regional chapter website template that is being distributed to all new chapters.

The National Capital Regional Chapter plans to draw members from Maryland, Delaware, and Virginia, as well as Washington, D.C. Nearly half of the 40 EERI members contacted in the region explicitly endorsed the formation of the chapter. The organizing committee included Frederick Krimgold (Virginia Tech), Jelena Pantelic (World Bank), Claudia Marin (Howard University), Sahar Safaie (World Bank), Judith Mitrani-Reiser (Johns Hopkins University), and William Anderson (independent consultant). The committee is confident that the ranks of the chapter will be increased by numerous interested professionals in the region who are not presently EERI members. The chapter will enable EERI to broaden EERI's influence by tapping into the region's vast scientific and technical talent in academic, corporate, and policy institutions. It may help facilitate access to federal agencies, Congress, and international bodies that play key decision-making roles in hazard risk reduction issues. If you wish to join the chapter, contact Bill Anderson (waanderson301@aol.com).

The **New York-Northeast** Regional Chapter plans to draw members from approximately a commutable range from New York City, including New Jersey, Connecticut, southern New York, Long Island, and western Pennsylvania. The first elected officers are President Sissy Nikolaou (Mueser Rutledge) and Treasurer/Secretary Jesse Richins (Mueser Rutledge). Members of the Board of Directors are Frank Clemente (AECOM), Ramon Gilsanz (Gilsanz Murray Steficek), Jagtar Khinda (NYCDOT), and Aspasia Zerva (Drexel University). If you wish to join the chapter, contact Sissy Nikolaou (snikolaou@mrce.com).

The **Utah** Regional Chapter encompasses the entire state, with the majority of the population residing within the Wasatch Front area. The chapter will endeavor to engage the outlying areas by offering remote access to meetings and encouraging other means of participation. The members applying for chapter status included Barry H. Welliver (BHW Engineers), Walter Arabasz (University of Utah), Gary Christenson (retired), Christopher Duross (Utah Geological Survey), Zach Hansen (ARW Engineers), Luis Ibarra (University of Utah), Bret Lingwall (Kleinfelder/University of Utah), John Masek (Weber Basin Water Conservancy District), Peter McDonough (Quester Corp.), Chris Pantelides (University of Utah), Robert Snow II (URS Corp.), and T. Leslie Youd (Brigham Young University). If you wish to join the chapter, contact Barry Welliver (bhw@digis.net).

NEES News

NEES-EERI Webinar on NEEShub Databases and Tools

“NEEShub Databases and Tools: Resources for Earthquake Engineering Practice” is the eighth in a series of Research to Practice Webinars co-produced by the Network for Earthquake Engineering Simulation (NEES) and EERI. It will take place Wednesday, June 27, 11:30 a.m. to 1:00 p.m. PDT. There is no cost to attend this webinar. To register go to <http://www.nees.org/toolswebinar>. PDHs will be available from EERI after the webinar for \$30.

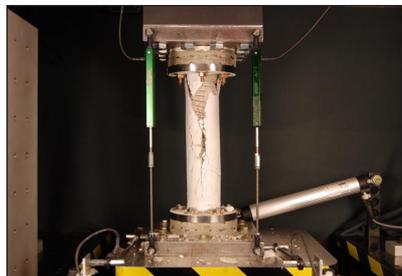
In this presentation, Professor Ellen Rathje of the University of Texas at Austin and Professor JoAnn Browning of the University of Kansas will highlight resources for engineering practice provided on the NEES cyber-infrastructure, or NEEShub at [nees.org](http://www.nees.org). These resources include an array of special databases and engineering tools that will be described and demonstrated.

The NEEShub Databases (<http://www.nees.org/resources/databases>) contain spreadsheet-style data from the NEES Project Warehouse and from external data sources that are vetted by professional communities and connected to their original sources. Existing and planned databases will be a primary focus of the webinar. Currently there are nine databases available through NEEShub, ranging from earthquake reconnaissance information to data from journal articles. Partnerships with the American Concrete Institute (ACI) and the *Journal of Earthquake Engineering* have provided a platform for authors to share the data plotted in figures in published manuscripts. Modeling parameters may be verified or developed based on information in databases such as those for the SAC Steel Project, Shear Walls, Shear Wave Velocity, and Structural Control.

NEEShub Project Warehouse: Data Updates

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

Framework for Development of Hybrid Simulation in an Earthquake Impact Assessment Context (<http://www.nees.org/warehouse/project/685>). PIs: Billie F. Spencer, Amr Elnashai (University of Illinois at Urbana-Champaign).



The objective of this project was to develop a framework which integrates NEES-type hybrid simulation with free-field and structure sensor measurements, system identification-based model updating technology and probabilistic fragility analysis to develop robust earthquake impact assessments. The framework was implemented in the integrated software tool NISRAF (NEES Integrated Seismic Risk Assessment Framework) and demonstrated through two pilot studies using a building in Burbank and the Meloland Road Overcrossing Bridge (MRO) in El Centro, both in California. The 1/5th scale portable Load and Boundary Condition Box (LBCB) at NEES@UIUC was used to perform cyclic tests on the MRO Bridge pier to calibrate the inelastic finite element model. Additionally, substructure hybrid simulation tests for the MRO Bridge and the Burbank building were performed to derive and update fragility functions. Detailed experimental data from each of the tests are available, including displacement readings from external sensors (LVDTs), displacement and force readings from LBCB sensors (LVDTs and load cells), test photos, and post-test analysis results.

International Hybrid Simulation of Tomorrow's Braced-Frame Systems (<http://www.nees.org/warehouse/project/605>). PI: Charles Roeder, Dawn Lehman (University of Washington), Stephen Mahin (University of California, Berkeley), Taichiro Okazaki (University of Minnesota).



Concentrically braced frames (CBFs) are practical and economical for seismic design, but the inelastic performance of CBFs is more complex and less well understood than many other structural systems. The primary objective of this research project was to improve their seismic performance. Experimental research investigated important design parameters by studying more than 40 large-scale specimens. The testing program included full-scale single-story single-bay braced frames tested at the University of Washington, and two-story braced frames tested at the NEES@Berkeley and NEES@Minnesota facilities. A unique component of the testing was a coordinated, international hybrid simulation with the NCRE facility in Taipei, Taiwan. Data were collected during testing to validate high-resolution and line-element nonlinear models; collected data included global forces and displacements, local rotations and out-of-plane movements of the gusset plates and braces, as well as local strains using conventional and non-contact instrumentation.

News of the Membership Wight Elected President of ACI

EERI member James K. Wight began his one-year term as president of the American Concrete Institute at the conclusion of the ACI Spring Convention in Dallas,



James K. Wight

Texas. Wight is the F.E. Richart Jr. Collegiate Professor of Civil and Environmental Engineering at the University of Michigan. His most recent research has concentrated on the use of high-performance fiber-reinforced concrete composites for earthquake-resistant design of critical members in concrete structures. Wight is the immediate past chair of the Structural Concrete Building Code Committee 318. He has received Distinguished Alumnus Awards from the Civil and Environmental Engineering Departments of the University of Illinois and Michigan State University.

Publication

Evansville Hazard Maps

The Evansville (Indiana) Area Earthquake Hazards Mapping Project was completed in February 2012. It was a collaborative effort among the U.S. Geological Survey and regional partners Purdue University; the Center for Earthquake Research and Information at the University of Memphis; the state geologic surveys of Kentucky, Illinois, and Indiana; the Southwest Indiana Disaster Resistant Community Corporation; and the Central U.S. Earthquake Consortium state geologists.

The finished products include three types of hazard maps for the Evansville area. Probabilistic seismic haz-

DesRoches Chair of GA Tech CEE School

EERI member Reginald DesRoches, who completed a term on the Institute's Board of Directors earlier this year, has been appointed as the new Karen and John Huff School Chair and Professor in the School of Civil and Environmental Engineering (CEE) at the Georgia Institute of Technology, effective May 15, 2012. DesRoches had been the Dean's Professor and associate chair in CEE.



Reginald DesRoches

Gary S. May, dean of the College of Engineering, said "Reggie has the vision, scholarship, experience, temperament and outstanding reputation in fields critical to the school that make him ideally suited and prepared to lead."

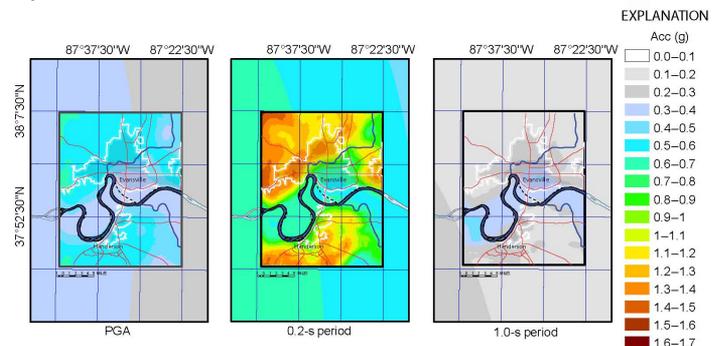
As the new chair, DesRoches will oversee a school that is consistently ranked as one of the nation's most prominent programs of its kind in both graduate and undergraduate

education. The school has become the second largest civil and environmental engineering program in the country, with more than 1,250 students and 60 faculty members.

DesRoches earned his Ph.D. in structural engineering from the University of California at Berkeley. His primary research interests are design of buildings and critical infrastructure subjected to extreme loads, seismic risk assessment of transportation systems, and application of smart materials in seismic-resistant design and retrofit. He has a particular interest in mitigating the impacts of earthquakes in the Caribbean and Central America. He is currently director of the Caribbean Hazards Assessment, Mitigation and Preparedness Project. DesRoches has served as chair of the ASCE Seismic Effects Committee (2006-2010) and the executive committee of the Technical Council on Lifeline Earthquake Engineering (2010). He is currently a member of the executive committee of the National Academy of Sciences Disasters Roundtable, and is on the advisory board for the Natural Disasters, Coastal Infrastructure and Emergency Management Research Center.

ard maps (see figure) show the expected ground motion with a given probability within a given period of time. Scenario ground-shaking maps show expected shaking from two specific scenario earthquakes, an M6.8 Wabash Valley event and an M7.7 New Madrid event. Liquefaction-potential maps show the likelihood of strong ground shaking from the scenario earthquakes producing liquefaction. These maps complement the USGS National Seismic Hazard Maps. However,

they are more detailed regionally and take into account the factors of surficial geology, soil thickness, and soil stiffness that greatly affect ground shaking. For more information, visit http://earthquake.usgs.gov/regional/ceus/urban_map/evansville/.



Probabilistic seismic hazard maps for the Evansville area.

Summary of the Minutes of the Board of Directors Meeting of February 28-29, 2012

Call to order: President Thomas Tobin called the meeting to order at 2:02 p.m. Also present were Directors Ian Buckle, David Friedman, Roberto Leon, Janiele Maffei, Joseph Maffei, Ellen Rathje, Kathleen Tierney, and Ivan Wong; Executive Director Jay Berger; and Publications Manager Eloise Gilland.

Publications Sales Report: Berger observed that Gilland's Publication Sales Report shows that total income from sales of publications in 2011 was essentially equal to income in 2010.

Membership Report: The Board reviewed the Membership Report by Membership Coordinator Juliane Lane. It indicates EERI is gaining some ground on overall membership, which is up 209 (9%) from February 2011. The increases are primarily in the student and e-affiliate categories; there is a decrease in the category of Young Professionals.

Executive Committee Report: The committee had taken the following actions since the last Board meeting:

- Approved retaining the mandatory \$25 shipping charge for international members, although some are opting not to receive printed copies of the *Newsletter* and *Spectra*. They will still receive printed copies of oral histories and special issues of *Spectra*.
- Voted to increase the honorarium paid to *Newsletter* editor Mark Yashinsky from \$150 to \$200 per month.
- Approved of *Spectra* Managing Editor Liz Stalaker's recommendation to contract with Pre-Media Global for page composition and Allen Press for printing and distribution.

Secretary/Treasurer's Report: Overview of Revenue and Expense Reports: For the benefit of incoming Secretary/Treasurer Janiele Maffei, Friedman explained that the Finance Committee oversees EERI's \$1.5 million in investments on a regular ongoing basis, usually by phone. The title of "Treasurer" is not operational, as the management has fundamental responsibility for accounting and budgeting, with the assistance of the Finance Committee.

Investment Report and Overview: The combined 2011 balance sheet showed a loss for Association Programs of \$84,376 as of December 31. Subtracting this from the opening fund balance for Association Programs (January 1, 2011) of \$384,037 results in a balance of \$299,661. Association Program liabilities as of December 31, 2011, were \$478,009. The Endowment Fund's total assets on December 31, 2011, were \$1,593,270. The balance for the combined Association and Endowment Programs is \$2,370,940.

Staff Issues: Berger reported that Gabe Mulford resigned as EERI IT manager and webmaster, effective February 24, 2012. Berger decided to seek a full- or part-time replacement and simultaneously consider outsourcing all or part of EERI's IT needs. Three candidates were interviewed, but none has the experience, skills or interest to take over all the IT responsibilities. Concurrently, a proposal was solicited for the full suite of IT needs from Mortimer Smythe Designs (MSD). Berger signed a contract with MSD for four months and then will assess their progress and EERI's needs. They will make recommendations to upgrade EERI's overall IT system that will be a savings in the long run.

Office Move: Berger reported the move into the new office space happened on February 18th. The building owner installed new carpet and painted, rebuilt the kitchen and added a small storage room. Estimated total savings over the 90 month

lease, as compared with staying in the old space, is \$170,000 to \$200,000.

LFE Proposal to NSF: EERI submitted an unsolicited LFE proposal to NSF on February 15th, to the attention of Kishor Mehta. Jack Moehle led the effort and was responsible for the conceptual framework. It will take several months to learn the fate of the proposal. It would be one component of the new LFE Program, with two others being supported by the World Bank and possibly the insurance industry. Janiele Maffei said the CFO of the California Earthquake Authority, Tim Richison, an expert on reinsurance, is interested in exploring the possibility of supporting international reconnaissance.

USGS Grant for Concrete Coalition: Berger reported that on February 24, EERI was notified that the USGS is funding an EERI proposal for the Concrete Coalition to create an online database of earthquake damage photos of concrete buildings from all over the world. The project runs for 12 months and has a budget of \$80,000.

World Bank Projects: Berger said that projects funded under the new agreement with the World Bank are underway. Farzad Naeim led an EERI team of global earthquake experts to Japan to review a set of notes summarizing lessons learned from the Tohoku earthquake and tsunami that would be applicable in developing countries.

FEMA State Grants Program: Berger informed the Board that FEMA contacted EERI and the Regional Consortia regarding assistance in FY 2012-13 on projects that in past years were undertaken by states through the State Grants Program. FEMA is now requiring 50% matching funds, and some states are unable to pay. Therefore, FEMA is considering providing those funds instead to EERI and the FEMA consortia to assist states with their programs in 2012-13.

Spectra Transition: Earthquake Spectra Managing Editor Liz Stalnak-er recommends Allen Press's Pinnacle web-hosting platform to replace Scitation. Her research indicated that Pinnacle would provide EERI with a more sophisticated website design and a more flexible, customizable product.

EERI Representation in Washington, D.C.: Berger reported that he and Public Policy and Advocacy Committee chair Arrietta Chakos met via teleconference with two potential Washington, D.C., representatives. The first was Lobbyit, a relatively new K Street lobbying firm with a model of representation tailored for smaller or medium sized businesses, associations, and nonprofits. The second was Jane Bullock, a partner with Bullock and Haddow LLC and the former chief of staff for James Lee Witt at FEMA.

Executive Director Objectives for 2012: The Board reviewed the list of executive director performance objectives for 2012 prepared by Berger. It identifies three critical EERI needs: (1) increasing EERI membership overall and stopping the loss of members in the Young Professional category; (2) increasing publication sales in 2012. EERI must do more to disseminate the valuable publications already produced and bring online new publications, including a replacement for the Monograph Series; and (3) maintaining LFE as the world's leading reconnaissance program. This means diversifying its funding stream and redefining its mission.

EERI Board Objectives, Responsibilities and Roles: Friedman said the topic of Board objectives, responsibilities, and roles is an annual discussion, especially this year when four of nine members are new. Being a Board member is an honor and a privilege but also a responsibility. Board members should envision themselves as trustees, not just directors, to ensure a good segue to the next Board, considering that terms go by quickly. The Board's dis-

cussion of the Institute's objectives addressed the following areas: attracting more young professional members, strategic planning, increasing membership, the nature of annual meetings, and the Learning from Earthquakes Program. Berger said the new chair of the Younger Members Committee, Nick Sherrow-Groves, plans to do a survey to learn what younger members are interested in.

At 6:25 p.m., Tobin adjourned the meeting for dinner. At 8:35 a.m. on Wednesday, February 29, he reconvened the meeting. President Elect Buckle was unable to attend. Director Leon departed at 10:00 a.m.

Learning from Earthquakes Committee: Berger said Jack Moehle, the new chair of the LFE Committee, plans to name new committee members soon. Friedman said the committee membership should have a wide age range, and transparency in how teams are selected is important. Tierney said the openness of committees could go a long way to keep people engaged in EERI.

Honors Committee: The current Honors Committee Chair, Sarah Nathe, is rotating off. The Board approved Craig Comartin to chair the committee. Other members are Kathleen Tierney, Les Youd, Bill Anderson (new) and Thalia Anagnos (new).

EERI Liaisons: EERI has liaisons to nine organizations. The Board agreed that they should be asked for email reports before every Board meeting. Friedman suggested having a liaison to the San Francisco Planning & Urban Research Association.

Subscribing Members and Board Contacts: Tobin requested that Board members call their assigned Subscribing Members at least twice a year, not just email them. He reported that the calls he has made have been rewarding.

Existing Chapter Activities: Tobin said it appears the Southern California region is too large for one chapter and needs to be divided up. Tierney

suggested Los Angeles County and Orange County.

Membership: Wong said the Membership Committee has begun the draft of an action plan and will push to complete it by June and submit it to the Board. It will have action items in the areas of chapters, social scientists, emergency managers, international, and young professionals.

NEES Journal Devoted to Data: Rathje said NEES would like to publish a new electronic journal entitled *Journal of Earthquake Engineering Data*, to give faculty and students more incentive to put their data in a repository by having an article to add to their resumes. It could be any kind of data, including social science, as long as it is sent to NEES. The Board approved a motion for Rathje to explore an earthquake engineering data journal that would be a collaboration between EERI and NEES.

Learning from Earthquakes May 20, 2012, Emilia, Italy, Earthquake

The USGS reported that an M6.0 earthquake struck northern Italy (44.89°N, 11.23°E) on May 20, 2012, at 4:03 a.m. local time. There were seven deaths and 47 injuries. Damage is particularly serious for cultural heritage structures, industrial plants, and rural buildings. Casualties were limited because at the time of the main shock, most people were at home. As of May 23, 5,292 people were being housed in tent cities. Almost all commercial activities inside the historical centers of the stricken municipalities have been affected. Precast reinforced concrete industrial structures built in recent decades had not been designed to withstand seismic action, because only since 2003 were the affected municipalities included in Seismic Zone 3. EERI and EUCentre have jointly established a clearinghouse: <http://www.eqclearinghouse.org/2012-05-20-italy/>.

News of the Profession

2012 WSSPC Awards

The Western States Seismic Policy Council conveyed its annual awards during April's 2012 EERI Annual Meeting/National Earthquake Conference in Memphis. John L. Aho, M.EERI, chairman of the Alaska Seismic Hazards Safety Commission, and Jonathan G. Price, Nevada state geologist and director of the Nevada Bureau of Mines and Geology, received Lifetime Achievement Awards.

National Awards in Excellence went to the following organizations:

- Earthquake Country Alliance (California), for public education activities,
- the USGS for ShakeMap and its suite of accompanying programs,
- the Utah Earthquake Working Groups for advancing earthquake hazard research in Utah,
- Project Safe Haven (Washington State) for its report, *Tsunami Vertical Evacuation on the Washington Coast*, and
- Washington State Emergency Management Division, for its report, *Washington State Seismic Mitigation Policy Gap Analysis: A Cross-State Comparison*.

For more information, visit <http://www.wsspc.org/awards/current.shtml>.

Announcements

nees@berkeley Hybrid Simulation Workshop

The *nees@berkeley* Equipment Site is hosting its annual Hybrid Simulation Workshop, to be held June 28-29, 2012, at the *nees@berkeley* laboratory located at the University of California at Berkeley's Richmond Field Station. The workshop emphasizes real-time loading, including demonstrations of the site's new "smart" dynamic platform. Attendees will (1) learn about OpenSees and OpenFresco, pros and cons of modern non-conventional monitoring and measuring techniques, and the basics of hybrid simulation methods; (2) conduct several real-time hybrid simulation demonstrations; (3) prepare to develop new hybrid simulation tests and algorithms; and (4) be able to use hybrid simulation in their NEES and non-NEES projects. **The registration deadline is June 15.** This workshop is offered at no cost to participants. Limited travel support is available for graduate students, post-doctoral researchers, or tenure-track faculty at U.S. schools. To register and apply for travel support, visit <http://nees.berkeley.edu/Events/201206a--workshop-hybridsim/>.

Special Sessions at Tsunami Symposium

The following two special sessions will take place during the 5th International Tsunami Symposium scheduled for September 3-5, 2012, at the European Commission — Joint Research Centre in Ispra, Italy (abstract submission deadline June 15). **Special Session 1:** The 2011 Tsunamigenic Tohoku, Japan, earthquake and the 2012 Sumatra quakes. Discussion will cover strategies and synergies needed for comprehensive tsunami risk assessment and effective disaster management. **Special Session 2:** Tsunami Safety of Nuclear Power Plants. Experts will (1) examine the lessons learned from the Fukushima-Daiichi event and other disasters and accidents of the past, (2) evaluate the potential danger of the many functioning older nuclear power plants, and (3) develop a set of recommendations to share with international organizations. For more information, visit <http://tsunamisociety.org/5thTsunamiSymposiumISPRA2012.pdf>.

Publication

Performance Evaluation Methods for Non-Engineers

A short report entitled *Building Seismic Performance Evaluation Methods for Non-Engineers* is available at no charge from <http://mitigation.eeri.org/category/educational-materials>.

EERI member Masahiko Higashino of Takenaka Corporation, a construction company in Japan, submitted the report. He indicated that one of the major lessons from the March 2011 Tohoku, Japan, earthquake was the need to help non-engineers — especially building owners — understand building seismic performance. Although no structural damage was observed in most buildings in Tokyo, nearly 400 km from the epicenter, people were excessively frightened, as the shaking was the longest they had ever experienced. They now wish to understand the seismic performance of the buildings they live in or own.

Seismic safety of buildings has usually been evaluated using highly specialized technical indices only understood by structural engineers. In an effort to convey building response to nonspecialists, Takenaka Corporation engineers propose two new evaluation methods, one of which pertains to high-rise buildings.

Both methods depict the response of a conventional building, a building with supplemental energy dissipation, and a seismically isolated building. They allow people to understand expected responses for different building types when subjected to different earthquake intensity levels.

The two methods may be utilized in the design stage to help building owners make decisions regarding which safety level to provide.

CALENDAR

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

2012

JUNE

17-20. 11th ASCE Joint Specialty Conf. on Probabilistic Mechanics & Structural Reliability (EMI/PMC 2012), South Bend, IN. <http://www.nd.edu/~emipmc12/> (12/11)

18-22. Short Course on Grouting Fundamentals & Current Practice, Golden, CO. <http://csmospace.com/events/grouting/> (2/12)

20-22. Int'l Conf. on Public Works for Public Learning, San Francisco, CA. www.pwplconference.com
See page 12. (2/12, 6/12)

27. NEES-EERI Webinar: NEEShub Databases and Tools: Resources for EQ Eng. Practice, 11:30 am -1 p.m. PDT. <http://nees.org/events/2012/06/27>. **See page 6.** (5/12, 6/12)

28-29. NEES Hybrid Simulation Workshop, Berkeley CA. **See page 10.** (6/12)

JULY

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

9-12. Quake Summit 2012, Boston, MA. nees.org/quakesummit2012 (5/12)

AUGUST

21-22. 6th Australasian Natural Hazards Management Conf. 2012. www.hazardeducation.org/conference (4/12)

26-30. 4th Int'l Disaster & Risk Conf. (IDRC), Davos, Switzerland. <http://www.idrc.info/> (2/12)

SEPTEMBER

3-5. 5th Int'l Tsunami Symp. (5ITS), Ispra, Italy. **See page 10.** (2/12, 5/12, 6/12)

12-15. SEAOC Convention, Santa Fe, NM. <http://convention.seaoc.org/> (2/12, 3/12, 5/12)

13-18. The Masonry Society An-

nual Meeting, Greenville, SC.

<http://www.masonrysociety.org/html/events/meetings/annual/2012/AnnMtg2012.htm> (6/12)

19-21. Council on Tall Buildings & Urban Habitat (CTBUH) World Cong., Shanghai, China. <http://www.ctbuh.org/shanghai2012/> (11/11)

19-21. 18th IABSE (Int'l Ass'n for Bridge & Structural Eng.) Cong., Seoul, Korea. www.iabse.org/Seoul2012 (12/11)

24-28. 15th World Conf. on EQ Eng. (15WCEE), Lisbon, Portugal. www.15wcee.org/ (8/10, 8/11, 11/11, 12/11)

OCTOBER

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

15-17. 8th Int'l Conf. on Structural Analysis of Historical Construction (SAHC 2012), Wrocław, Poland. www.sahc2012.org (1/12)

16-19. Deep Foundations Institute (DFI) Annual Conf., Houston, TX. www.dfi.org/conferencedetail.asp?id=193 (12/11)

23-27. 6th China-Japan-US Symposium on Lifeline EQ Eng., Chengdu, China. www.nac-gea.org (5/12)

2013

FEBRUARY

12-15. EERI Annual Meeting, Seattle, WA. **See page 1.** (6/12)

APRIL

3-5. Architectural Eng. Institute Conf., University Park, PA. http://www.engr.psu.edu/ae/AEI-2013/Call_for_Papers.asp (3/12)

22-24. Int'l Federation for Structural Concrete (fib) Symposium, Tel Aviv, Israel. <http://www.fib2013tel-aviv.co.il/>. **See this page.** (5/12, 6/12)

29-May 4. 7th Int'l Conf. on Case Histories in Geotech. Eng., Wheeling, IL (Chicago area). <http://7icchge.mst.edu> (12/11, 2/12)

MAY

19-23. 4th Session of the Global Platform for Disaster Risk Reduction, Geneva Switzerland. www.internationaldisasterconference.com/ (1/12)

AUGUST

18-23. 22nd Int'l Conf. on Structural Mechanics in Reactor Technology (SMiRT-22), San Francisco, CA. www.smirt22.org (2/12, 4/12)

Announcements

Calls for Papers

Concrete Symposium: A call for papers has been issued for the 2013 Symposium of the International Federation for Structural Concrete (*fib*), to be held April 22-24 in Tel-Aviv, Israel, with the theme "Engineering a Concrete Future: Technology, Modeling and Construction." Sub-themes cover the latest developments, innovations, and techniques regarding materials, design, and construction of concrete structures. For more information on topics and to submit an abstract of up to 200 words, visit <http://www.fib2013tel-aviv.co.il/>.

JSE Special Issue on Computational Simulation: The ASCE *Journal of Structural Engineering (JSE)* will publish a special issue on Computational Simulation in Structural Engineering, tentatively scheduled for December 2013. Contributions are welcome on topics including but not limited to structural response to combined or sequential hazards; fracture, failure, and progressive collapse simulations; soil-structure and fluid-structure interaction; non-linear solution algorithms for computing structural response; and optimization and reliability of structural response. Authors should e-mail one-page abstracts to guest co-editor Michael H. Scott, M.EERI, at michael.scott@oregonstate.edu by August 31, 2012. The 2nd guest co-editor is Erol Kalkan, M.EERI (ekalkan@usgs.gov). Full manuscripts are due November 30, 2012, to be submitted to <http://jrnsteng.edmgr.com> with a cover letter specifying the special issue. For author guidelines, visit <http://www.pubs.asce.org/journals/>.



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EERI Newsletter, June 2012 Volume 46, Number 6

News of the Institute

Student Resumes Online

As a service to EERI member firms and student members exploring the job market, 33 student member resumes have been posted on EERI's web site at <http://www.eeri.org/member-center/career-resources/resumes/>. The page consists of a table displaying student names; universities; disciplines (structural

for 30 and geotechnical for 3); degrees earned or expected; dates awarded, expected or in progress; whether the student is seeking an internship (2); and links to each resume. Degrees received or expected are masters for 14, doctorates for 14, and bachelors for 5.

The following universities are represented: California Polytechnic State University, Pomona; Georgia Institute of Technology; McGill University; Missouri University of Science & Technology; Oregon State University;

Portland State University; Purdue University (2); Rensselaer Polytechnic Institute; Rice University; University of British Columbia (3); University at Buffalo (2); University of California at Davis (3), Irvine, and Los Angeles (3); University of Cincinnati; University of Engineering and Technology, Peshawar, Pakistan; University of Memphis (3); University of Puerto Rico, Mayaguez (3); University of Texas, Arlington; and University of Southern California (2).

Announcement

Golden Gate Bridge Conference

An international conference hosted by the Golden Gate Bridge, Highway and Transportation District, titled "Public Works for Public Learning," will be held June 20-22, 2012, in San Francisco, California. The conference will focus on the use of civil engineering works as educational opportunities for the public and will offer ready-to-use practical information on how to develop and fund effective exhibits, including how to access federal set-asides and develop ideas for tapping into federal and local funding sources. The keynote speaker will be G. Wayne Clough, the 12th Secretary of the Smithsonian Institution in Washington, D.C., and a past member of the EERI Board of Direc-

tors. For more information, visit www.pwplconference.com.

The conference is supported by a \$3 million National Science Foundation grant, which is also underwriting an outdoor exhibition that uses the Golden Gate Bridge to educate the public about the science, technology, engineering, and math principles underlying its infrastructure. CUREE (the Consortium of Universities for Research in Earthquake Engineering) is the project manager for the effort and is responsible for several exhibits dealing with the themes of wind pressure exerted on the bridge, examples of sections of original and seismically retrofitted steel struts, seismic isolators, fog and foghorns, how a suspension bridge stands up, the geology of the foundations, and other topics. It is also producing a large (80-foot-long) illustrated mural



of the history of the bridge. The Exploratorium of San Francisco is producing two 10-foot long working models of the bridge that demonstrate aspects of its structural behavior. One allows the visitor to feel the relationship between tower height (cable sag) and tension in a main cable. The other lets the visitor shake a scale model to see the various shapes (modes) in which the bridge moves when excited by wind or earthquake.