



**EARTHQUAKE ENGINEERING
RESEARCH INSTITUTE
NEWSLETTER**

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**EARTHQUAKE ENGINEERING
RESEARCH INSTITUTE**

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News of the Institute

**Elections Results: Comartin Endorsed as
President-Elect, Naeim and Aho Elected to
Board of Directors**



Craig Comartin



Farzad Naeim



John L. Aho

The voters endorsed **Craig Comartin** of Comartin-Reis in Stockton, California, to be EERI president-elect in the 2004 election. **Farzad Naeim** of John A. Martin & Associates in Los Angeles and **John L. Aho** of CH2M Hill in Anchorage, Alaska, were elected the newest members of the Board of Directors. Many thanks go to the members of this year's Tellers Committee: Ayhan Irfanoglu of Wiss Janney Elstner Associates, Nilesh Shome of ABS Consulting, and Tim Wiley of Degenkolb Engineers.

Comartin, Naeim, and Aho will be formally welcomed to their new posts at the Board Meeting in Los Angeles on February 4. Comartin will serve one year as president-elect, followed by two years as president and one additional year as past president. He will take up the position vacated by past president Chris Poland of Degenkolb Engineers, who is leaving the Board

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**EERI and Japan Association for Earthquake
Engineering Sign Cooperative Agreement**

On January 8 at the University of California at Berkeley, EERI President Thomas D. O'Rourke joined Kenji Ishihara, president of the Japan Association for Earthquake Engineering (JAEE), in signing a Scientific and Technical Collaboration Agreement between the two organizations. EERI President-Elect Craig Comartin and JAEE Vice-President Masanori Hamada also participated in signing the agreement.

The signing ceremony took place during the joint convening of the 11th International Conference on Soil Dynamics and Earthquake Engineering and the 3rd International Conference on Earthquake Geotechnical Engineering, just before the First Ishihara lecture was delivered by W. D. Liam Finn. O'Rourke was a conference speaker.

The objective of the agreement is to promote and sponsor collaboration between the organizations, with the goal of participating jointly in scientific and technical activities in areas of common interest related to earthquake engineering. In order to achieve the objective of the agreement, EERI and JAEE

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News of the Institute

EERI Student Chapter Activities

The following are additional summaries of EERI student chapter activities from last year. (See page 2 of the September 2003 Newsletter for reports from several other chapters).

University at Buffalo

The University at Buffalo (UB) student chapter organized an Earthquake Engineering Seminar Series consisting of five presentations over the course of the 2002-03 academic year. All the talks were cosponsored by the Multidisciplinary Center for Earthquake Engineering Research (MCEER) Networking and Education Programs; the MCEER Student Leadership Council; the UB-EERI Student Chapter; and the UB Department of Civil, Structural and Environmental Engineering. Summaries of the talks were featured in various MCEER bulletins. Several students from the chapter presented posters at EERI's Annual Meeting in Portland, Oregon, in February 2003.

One of the chapter goals for the 2003-2004 academic year is to increase its membership, especially from disciplines such as architecture and urban planning, geography, and geology, in addition to civil, structural and environmental engineering. Another goal is to hold informal monthly meetings with students and faculty on multidisciplinary issues regarding earthquake engineering. The chapter web site, **civil.eng.buffalo.edu/UBEERI/**, contains minutes, reports, abstracts, pictures, links, and other material on chapter activities.

University of Missouri-Rolla

The University of Missouri-Rolla (UMR) student chapter hosted five distinguished speakers from industry and academia as part of its seminar series during the 2002-2003 aca-

demical year. One of the speakers was Ronald T. Eguchi of ImageCat in Long Beach, California, whose two-day visit was part of EERI's Friedman Family Visiting Professional Program. Eguchi's firm is a risk management company specializing in the development and use of advanced technologies for risk assessment and reduction. His main presentation was titled *Validation of the REDARS Earthquake Loss Estimation Model*. On February 8, the chapter represented UMR at the Missouri Earthquake Awareness Week activities day. The event was held at the St. Louis Science Center and included many area universities and governmental agencies doing work and research related to the New Madrid zone's earthquake hazard. The chapter demonstrated a shake table and liquefaction tank to many interested attendees. The chapter's web site is **campus.umn.edu/eeeri/**.

Oregon State University

The Oregon State University (OSU) chapters of EERI and ASCE co-sponsored a Ports and Harbors Seminar Series consisting of four presentations during October and November 2002, led by faculty advisor Stephen Dickenson and entitled "Current Developments at Major West Coast Ports: Engineering Issues and Construction Challenges." Although each presentation covered many of the issues facing current port authorities, a major component was the ongoing effort to retrofit existing port facilities to withstand strong ground motions. Three more presentations on unrelated topics took place in January, February, and March 2003.

During the 2003 EERI Annual Meeting in Portland, chapter members joined colleagues from Portland State University to provide logistical assistance and general support. Several OSU graduate students participated in the meeting's poster session. Three chapter officers

developed a geotechnical and structural earthquake engineering presentation geared toward a 3rd through 5th grade audience, including information on the causes of earthquakes and the general roles of geotechnical and structural earthquake engineers. Demonstrations included a liquefaction simulation model with a portable structural frame shake table and a slide presentation. Supplemental classroom materials were also provided. Three elementary schools hosted the presentation. The chapter aims to encourage the involvement of practicing engineers with the student chapter and to continue developing strong relationships with middle and secondary education programs in Corvallis and surrounding communities.

Election Results

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after four years of service. Current President Thomas D. O'Rourke will serve the second year of his two-year term in 2004, and will become past president in 2005. Naeim and Aho will each serve three years as directors, replacing Sergio Alcocer and Svetlana Brzev, whose terms have expired. EERI extends thanks to Poland, Alcocer, and Brzev for their years of outstanding service and dedication to the Institute.

It is not too early to start thinking about next year's election of directors. The Nominating Committee welcomes suggestions from the membership, including self-nominations. Nominees for director must have been active (or honorary) members of EERI for at least five years, and must not have been nominated to the Board in the last two years. To submit a name for consideration, send a brief note giving the name and qualifications of the potential candidate to the Nominating Committee in care of the EERI office. All submissions are confidential.

EERI - JAEE Cooperative Agreement

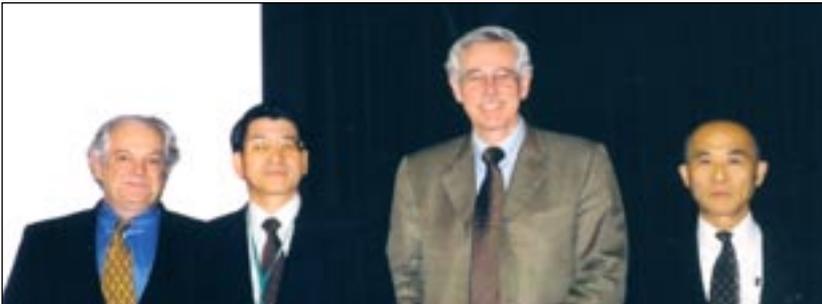
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agreed to do the following:

- develop an agenda of common problems and areas of opportunity in earthquake engineering,
- exchange and translate selected publications and other information,
- develop joint publications and information on mitigation measures,
- carry out joint research programs,
- organize seminars and conferences,
- exchange scholars to participate in conferences, colloquia, symposia, and special short-term courses,
- encourage the organization of technical committees and participation therein,
- promote the participation of social scientists from both countries in the development of earthquake mitigation policies, and
- encourage a multidisciplinary approach in the activities to be developed.

In order to carry out the notable goals of the agreement, EERI and JAEE are establishing a bilateral commission to prepare work programs, to evaluate periodically their fulfillment, and to exchange information on their progress and on the development of policies and procedures.

As the first cooperative activity resulting from this agreement, JAEE has invited EERI to participate in the International Symposium on Earthquake Engineering in Japan scheduled for January 13-16, 2005, to commemorate the tenth anniversary of the Kobe earthquake. There will be keynote lectures, panel discussions, technical tours, and a workshop with the theme "New Frontiers for Seismic Hazard Mitigation." Workshop sessions will cover engineering seismology, structural engineering, geotechnical engineering, and social and economic issues.



Participants in EERI-JAEE cooperative agreement signing ceremony (left to right): Craig Comartin, Masanori Hamada, Tom O'Rourke, and Kenji Ishihara. Visit the EERI web site www.eeri.org to see additional photos.

Membership Survey Prize Goes to Porter

Larry Porter, formerly a principal in the firm Geocarte and now a retired EERI member, was picked as the winner of the random drawing held in conjunction with the recent membership survey. Porter, who joined EERI in 1974, won free registration to the 2004 Annual Meeting at the Omni Hotel in Los Angeles held February 4-8. In a thank you note to EERI staff, Porter indicated he was "very grateful for this chance winning." Results of the survey were presented on February 6 during the Annual Meeting business meeting, and will be covered in the March *Newsletter*.

News of the Profession

Applegate Named USGS Senior Science Advisor

David Applegate has been selected as the Senior Science Advisor for Earthquake and Geologic Hazards at the U.S. Geological Survey (USGS). He will lead the Geologic Division's Earthquake Hazards Program and will also provide coordination for geologic hazards within the USGS.

Applegate is currently the director of government affairs at the American Geological Institute (AGI), a non-profit federation of 42 geoscience societies. Before joining AGI in 1995, he served with the Senate Committee on Energy and Natural Resources as the American Geophysical Union's Congressional Science Fellow.

Applegate currently serves on the steering committee of the National Research Council's Disaster Roundtable, co-leads the Congressional Natural Hazards Caucus Work Group, and chairs the International Union of Geological Sciences Task Group on Public Affairs. He was the 2003 president of the Geological Society of Washington.

In 2002, he received a Presidential Certificate of Merit from the American Institute of Professional Geologists. The AGI Government Affairs Program, under Applegate's leadership, was a 2003 recipient of the USGS John Wesley Powell Award.

Applegate holds a B.S. in geology from Yale University and a Ph.D. in geology from the Massachusetts Institute of Technology, where his dissertation covered the tectonic evolution of the Funeral Mountains in the Death Valley region of California.

Announcement

CUREE-Caltech Woodframe Project Completed

The Consortium of Universities for Research in Earthquake Engineering (CUREE) recently announced the successful completion of the CUREE-Caltech Woodframe Project, funded by the Federal Emergency Management Agency through a hazard mitigation grant administered by the California Governor's Office of Emergency Services. The project consisted of coordinated engineering investigations and implementation activities whose objective was to reduce earthquake losses to woodframe construction. The exposure and vulnerability of woodframe construction had been demonstrated by the Loma Prieta and Northridge earthquakes.

Project Manager John Hall, a Caltech professor, said that the project

significantly increased understanding of important issues and augmented the existing data set on the cyclic behavior of components and complete buildings. These data have been incorporated into recommendations for building code improvements.

The project was divided into the following five interrelated elements: testing and analysis, field investigation, codes and standards, economic aspects, and education and outreach. The range of research and implementation activities in the project, which began in 1998, was broad, spanning work conducted under more than 70 subcontracts to CUREE. Laboratory investigations conducted by over a dozen different universities brought a new lev-

el of research attention to this subject, including full-scale shake table experiments, quasi-static tests of shear walls and diaphragms, connection tests, and nonstructural studies, that is, on partitions. An unexpected result of shake table tests showed that properly installed stucco and drywall can provide a strength increment that can keep a structure essentially elastic under strong shaking.

A free copy of the comprehensive final version of the project's newsletter can be requested by e-mailing curee@curee.org. The CUREE web site (www.curee.org) and the newsletter contain a list of the thirty technical publications produced during the project that are available for purchase.

News of the Institute

Endowment Fund Donors

EERI would like to thank the donors to the Endowment Fund listed below and acknowledge their recent contributions. EERI's Endowment supports those innovative projects that ensure the Institute's continuing leadership in the earthquake engineering professions.

\$3,000

David A. Friedman and
Paulette J. Meyer

\$1,200

I. M. Idriess

\$500

Roland L. Sharpe

\$200-\$499

James E. Beavers
Vitelmo V. Bertero
C. Terry Dooley
Robert D. Hanson
Richard Jay Love
James K. Mitchell
Douglas J. Nyman
Susan K. Tubbesing
Anestis S. Veletsos
Robert V. Whitman

\$100-\$199

Mihran S. Agbabian
Donald G. Anderson
Siavash Basseri
Finley A. Charney
Sheldon Cherry
Lori Dengler
Thomas C. Hanks
Thomas L. Holzer
George C. Lee
LeVal Lund
John D. Meyer
Gerard C. Pardoan
William J. Petak
Mark R. Pierepiekarz
Ellen M. Rathje
Anshel J. Schiff
Anthony F. Shakal
Roger L. Sharpe

Craig W. Tillman
Edwin Zacher

Other Amounts

Nesrin Basoz
Ross Esfandiari
William T. Holmes
Cynthia A. Hoover
Larry C. Hultengren
Michael E. Kreger
James LaFave
Gerald D. Lehmer
Roberto T. Leon
Andrew T. Merovich
William A. Mitchell
Jean-Paul Pinelli
Fred M. Turner
Akira Wada
Terence A. Weigel
Jong-Cheng Wu

News of the Membership

Spanos Receives Von Karman Medal

Pol D. Spanos is the 2003 recipient of the Theodore von Karman Medal from ASCE for his significant contributions to innovative analytical and numerical tools for studying a wide spectrum of civil engineering systems subject to random fields and exhibiting nonlinear behavior. This medal is presented to an individual, irrespective of particular societal affiliation, for distinguished achievement in engineering mechanics applicable to any branch of civil engineering. Spanos is a professor of civil and mechanical Engineering and has held the L. B. Ryon Endowed Chair in Engineering at Rice University since 1988. He is currently working on two NSF-sponsored projects on estimation of loss induced by extreme loads on constructed facilities, and on wavelets-based stochastic models of accelerograms.

Learning from Earthquakes

Quakes Hit Iran and California in December; EERI Sends Team to Bam

As part of its Learning from Earthquakes program supported by the National Science Foundation, EERI sent a team of engineers and medical specialists to Iran to investigate and report on the effects of the 6.6 magnitude earthquake that destroyed the city of Bam on December 26. The earthquake resulted in the deaths of more than 30,000 people, with an additional 50,000 seriously injured. Over 90 percent of the buildings in Bam collapsed and numerous others are uninhabitable, leaving more than 100,000 homeless throughout the earthquake-stricken region. Although Bam is situated in a seismically active region, there has been a long absence of serious earthquakes at or near its location.

The EERI team is led by structural engineer Farzad Naeim of John A. Martin & Associates, and includes risk analysts Ron Eguchi and Babak Mansouri of ImageCat, structural engineer Mike Mehrain of URS, geotechnical engineer Ali Bastani of Leighton and Associates, Hassan Movahedi (M.D.), earthquake ground motions specialist Yousef Bozorgnia of ATS, risk analyst Mohsen Rahnama of Risk Management Solutions, environmental engineer Elahe Enssani of San Francisco State University, geotechnical engineer Farhang Ostadan of Bechtel; and social scientist Kamran Sepanlo (currently living in Iran). The reconnaissance is being coordinated at EERI by Learning from Earthquakes Program Manager Marjorie Greene. Several team members were in Bam and the surrounding area before the quake struck, working with colleagues of the International Institute of Earthquake Engineering and Seismology (IIEES) in Tehran.

This reconnaissance is an international, cooperative effort between EERI and IIEES to collect perishable data, determine the causes of

damage and loss of life, observe emergency response operations, apply and test advanced technologies for data acquisition and restoration management, and recommend measures to reduce the chances of such destruction in the future.

Four days before the destructive event in Iran, a 6.5 magnitude earthquake occurred in central California near San Simeon and Paso Robles. While the San Simeon and Bam quakes were of similar magnitude and occurred at approximately the same five-mile depth, their results were dramatically different. In contrast to the Bam earthquake, two people were killed in the California quake, and about 40 buildings were severely damaged. Engineering reconnaissance in Paso Robles shows

that even moderate strengthening and retrofitting of masonry buildings led to a remarkable difference in their seismic response, with no observations of collapse in retrofitted structures.

EERI member Abe Lynn of Cal Poly in San Luis Obispo is coordinating a reconnaissance investigation with several EERI members, including Rakesh Goel of Cal Poly; LeVal Lund representing the Technical Council on Lifeline Earthquake Engineering; and Josh Marrow of Simpson, Gumpertz, and Heger.

Preliminary reconnaissance observations for the San Simeon earthquake and information about the Bam earthquake have been posted on the EERI web site www.eeri.org.



The Bam earthquake destroyed the historical citadel of Arg-e-Bam, adding severe cultural loss to its list of serious effects. (Photo: Mohsen Rahnama)

The buildings in Bam were typically adobe structures, made of dried mud bricks with little or no reinforcing or seismic detailing. (Photo: Farzad Naeim)



Six-story office building that collapsed, in part because of missing welds. (Photo: Farzad Naeim)

News of the Institute

Summary Minutes of the September 26, 2003, Board of Directors Meeting

Call to order: Present were President T. O'Rourke, Past President C. Poland, Secretary/Treasurer R. Mayes, Vice President S. Brzev, and Directors S. Alcocer, D. Ballantyne, M. Comerio, and S. Nathe. Also present were Executive Director S. Tubbesing and Administrative Assistant V. Austin. Director B. Clark was not present.

NEHRP reauthorization and next steps: Poland related that HR 2608 has been successfully shepherded through the legislative process in the House. The bill report of the House Subcommittee on Research cites EERI as one of the advocacy groups and incorporates the themes put forth by the earthquake engineering community. Brian Pallasch (ASCE) and Poland, NEHRP Coalition co-chairs, indicated that they are working to get the NEHRP reauthorization on the Senate's agenda.

O'Rourke is meeting with Arden Bement at NIST. The Board feels that it should be emphasized to NIST that its role as the new NEHRP lead agency is vitally important and that an advisory committee would be very helpful in carrying out this new responsibility. EERI will offer to assist in every way possible.

Revenue and expense report:

Mayes reviewed the Report of Revenue and Expenses as of August 31, 2003. The combined balance sheet showed an opening fund balance of \$141,958, which was augmented by \$224,993 in excess revenues over expenses.

EERI's total liabilities of \$99,713 combined with the total fund balance of \$366,951 equaled \$466,664. The Endowment Program's opening bal-

ance of \$552,753 was augmented by \$65,185 in excess revenues over expenses, for a total fund balance of \$617,938. Total liabilities in the amount of \$299,496, combined with the total fund balance of \$617,938 equaled \$917,434. The balance of the combined association, endowment, and technical programs equaled \$1,384,098.

The Investment Funds Report showed a balance of \$231,782 in the General Administrative Short Term Investment Fund and \$33,168 in the Long Term Investment Fund. The Endowment Fund balance totaled \$617,938, the Friedman Family Investment Fund totaled \$131,917, and the Shah Family Innovation Prize totaled \$167,579. The balance of the interest-bearing checking account was \$41,032. The combined funds in both the General Administrative checking and investment accounts totaled \$307,994.

The Grants Status Summary showed that of \$3,370,365 in active grants, \$1,889,055 has been expended, leaving a balance of \$1,481,310.

Development Committee report:

The committee met in September and agreed to seek sponsorships from private firms, including subscribing members of EERI, to support projects such as the mitigation center, the housing project, and Quake '06. These and other areas of growth in the Institute's activities raise issues that will be addressed at the meeting with subscribing members in December.

The Board will request that the Development Committee draft a policy regarding the Institute's acknowledgment of corporate and private sponsors that will avoid any potential conflict of interest, perception of commercial benefit, or implied endorsement by EERI.

Spectra rates: The Publications Policy Committee was asked to conduct a comprehensive evaluation of

Spectra and to consider how to deal with the increasing number of paper submissions and new online costs. This review will include investigating the methods other organizations are using to deal with increased costs and the possibility of increasing the annual number of *Spectra* issues from four to six.

2004 dues: The Board approved a motion to increase annual membership dues by \$10 for regular members and by 5% for subscribing and institutional members, but to leave unchanged the dues for student members.

Comparative retirement benefit review:

Mayes reviewed the results of his assessment of the current employee benefits package and of a possible contribution by the Institute to an employee retirement plan. Mayes advised looking at this issue from a long-range perspective and from the standpoint of the Board's responsibility to EERI employees. The alternative of creating a retirement benefit over and above the current benefit package would incur an additional expense in the \$36,000 to \$50,000 range, which would translate into a dues increase of \$18 to \$25 per member. The Board agreed to defer its decision until next year, when the status of this year's budget will be more clear. Mayes will poll the staff for their feedback regarding mandatory participation in a retirement savings program as part of the existing benefits package and report back at the next Board meeting.

Lease and office space status:

Mayes reported that an attorney has reviewed and suggested some changes to the terms of the ten-year lease to be renewed with the current building owner. In view of the amount of money that will be expended during the term of this lease, the Board discussed the advantages and disadvantages of purchasing a building for the Institute in the next few years. The Development

Committee will examine the issue and then consider whether to seek underwriting from a major donor to pursue this as a long-term strategy.

2005 Annual Meeting location:

The Board suggested exploring the possibility of holding the meeting in Mexico in coordination with the Mexican Society for Earthquake Engineering.

Endowment Committee report:

The Board believes that the name of the Endowment Committee should be changed to reflect its activities in developing and managing special projects and that this should be announced at the Annual Meeting.

The white paper resulting from the June Legacy Workshop has been drafted and is currently being reviewed by a multidisciplinary committee with the goal of an improved integration of engineering and technical information. The final report will be sent to all workshop participants.

Learning from Earthquakes report:

Comerio reported that the 2002 Loss Data Workshop Steering Committee has recommended creating targeted task forces to set priorities in the following four important areas: post-earthquake damage data collection, data repository, secondary data collection, and inventory data. The Board endorsed the creation of a steering committee and task force to take the next steps.

Housing Encyclopedia budget for 2004:

A new brochure is being developed that provides basic information about the project and web site. There are now 85 approved reports on the web site with ten additional reports in working status. The Board approved inclusion of \$23,270 for the 2004 Housing Project in EERI's budget. Staff time and benefits will be charged to EERI and not to the project. Efforts will continue to seek other sources of funding to support this project.

International activities: O'Rourke received a letter from Kenji Ishihara,

president of the Japan Association of Earthquake Engineering, indicating that this organization is ready to sign a cooperative agreement with EERI. O'Rourke is working out a mutually acceptable date with JAEE. (See page 1 of this *Newsletter*.)

Brzev has spoken with the Canadian Society, which is interested in entering into an agreement with EERI. There is also interest in establishing what would be the first student chapter outside the United States at the University of British Columbia. (See article below.)

2006 National Conference update:

Poland met with representatives of the California Governor's Office of Emergency Services and the Seismological Society of America. It was agreed to co-locate their meetings but to keep each organization's meetings distinct. Space at the Moscone Convention Center has been secured. The plan for coordinating parts of the program is being developed by the three organizations. On the first day, there will be joint meetings and social activities. On subsequent days, each organization will hold its own technical sessions, but they will be open to all who have registered for the meeting. During the next couple of months, planning meetings will be conducted through conference calls.

Younger member development strategy:

In keeping with the Board's recognition that any vital organization must be aware of the needs of its younger members, Younger Members Committee Chair Josh Marrow was asked to share his perspective. Marrow observed that students are facing financial pressures because of increased tuition and cost-of-living expenses. They need encouragement to join as student members, and the Board should use its powers of persuasion to influence faculty to endorse student membership. Senior members of EERI, including the Board, should socialize with students at Annual

Meetings and other events. He suggested that firms should support membership for entry-level professionals for the first two years and establish a policy that new, professional staff must join at least two professional organizations of their choice. Marrow also proposed that younger members attend the Distinguished Lectures or the Friedman Family Visiting Professional Lectures and talk about EERI to student audiences utilizing a presentation prepared by the staff.

The Board discussed how to institute a mentoring program for students with experienced professional members. The Institute will provide an incentive for young faculty to recruit student chapter members by providing a free Annual Meeting registration to all who bring in ten new student members and whose chapter had an active year.

News of the Institute

New EERI Student Chapter in Canada

EERI is pleased to announce the formation of the newest EERI student chapter at the University of British Columbia (UBC) in Vancouver, Canada — the first chapter outside the United States. The Civil Engineering Department at UBC is a leading research and education center in earthquake engineering, offering several courses in the discipline and performing research in the recently constructed earthquake engineering research facility. The fact that the UBC campus is situated in an earthquake-prone region also makes it important for its students to keep up to date with developments in the fields related to earthquake engineering and earthquake hazard mitigation. Assistant Professor Ken Elwood will be faculty advisor for the chapter. Ronald DeVall of the structural engineering consulting firm of Read Jones Christoffersen will be the chapter's local professional contact.

Publications

Earthquakes, Fifth Edition

Long-time EERI member Bruce Bolt, one of the world's most respected seismologists and a professor emeritus at the University of California, Berkeley, has authored the fifth edition of the acclaimed overview of the history of earthquakes and seismology entitled *Earthquakes* (ISBN 0-7167-5618-8). It provides an introduction to topics such as geologic faults, intensity patterns, plate tectonics, secondary effects of earthquakes (such as tsunamis), and protection of people and property. For this edition, the sequence of chapters has been reorganized to facilitate learning the broad concepts before the details. It features new exercises and web references that give students the opportunity to work with data the way field seismologists do. The following features are also new to this 320-page edition:

- New photographs and revised maps of key earthquake occurrences.
- Studies of the September 11 World Trade Center collapse and the Kursk submarine explosion in 2001 as new examples of forensic seismology.
- Discussion of recent earthquakes such as Chi-Chi, Taiwan (1999) and Denali, Alaska (2003).
- Latest position on earthquake prediction efforts.
- Discussion of recent cases of "sympathetic" and "slow" earthquakes.
- An expanded explanation of plate tectonic links between volcanoes, earthquakes, active faults, and GPS monitoring of crustal movement.

The price is \$35. For ordering information, call 888/330-8477.

ATC-29-2 Report

The Applied Technology Council (ATC) has published a report entitled *Proceedings of the Seminar on Seismic Design, Performance, and Retrofit of Nonstructural Components in Critical Facilities*. This 574-page report documents the technical presentations made at the ATC-29-2 Seminar on Nonstructural Components held in October 2003.

The purpose of the seminar was to present current research, practice, and informed thinking pertinent to seismic design, retrofit, and performance of nonstructural components, with a special emphasis on critical facilities (computer centers, hospitals, manufacturing plants with especially hazardous materials, museums with fragile and valuable collection items). The seminar focused on supports and bracing for elevator systems, ceilings, partitions, cladding, glazing, contents, water piping systems, and mechanical and electrical equipment. The ATC-29-2 seminar technical program was developed for design professionals, regulators, researchers, manufacturers, contractors, insurers, owners, and facility managers. Funding for the seminar was provided by the Multidisciplinary Center for Earthquake Engineering Research and the National Science Foundation.

The ATC-29-2 *Proceedings*, including 43 technical papers, are available in two formats: (1) a spiral-bound volume, and (2) in PDF format on CD-ROM. Copies can be obtained from the Applied Technology Council, 201 Redwood Shores Parkway, Suite 240, Redwood City, CA 94065 (phone 650/595-1542; fax 650/593-2320; e-mail ATC@ATCouncil.org; web and online store, www.ATCouncil.org). The prices are \$65 per copy for the spiral-bound volume (plus shipping and sales tax), and \$35 per copy for the CD-ROM (plus shipping and sales tax).

News of the Membership

Distinguished Alumni Award for Griffis

EERI member Lawrence G. Griffis, P.E., president of Walter P. Moore's structures division, has been inducted as a charter member of the Civil and Architectural Engineering Academy of Distinguished Alumni for the University of Texas. There were 26 inducted in the inaugural group. Griffis earned both a B.S. degree in civil engineering and an M.S. degree in structural engineering from the University of Texas.

Job Opportunity

Seismology Outreach Specialist for IRIS

The Incorporated Research Institutions for Seismology (IRIS) in Washington, DC., funded by the National Science Foundation, seeks an individual with geoscience training, an interest in web development, and a commitment to informal education to join its national Education and Outreach Program. This new position will involve technical, organizational and public relations activities. Responsibilities include coordinating a museum display and seismographs in schools programs and developing educational resources for the web.

The successful candidate will have training or experience in seismology, museum displays, web page design, science education, and education technology. An undergraduate degree in geoscience or geoscience education and demonstrated writing and computer skills are required. An MS in geoscience, geoscience education, computer science, or related discipline is preferred. Screening of applications will begin on February 6, 2004. For application information, visit www.iris.edu.

News of the Institute

Annual Meeting Travel Grant Recipients

With support from FEMA, several full and partial travel grants have been awarded to encourage student members and younger EERI members (out of school no more than three years) to attend this year's Annual Meeting in Los Angeles. This financial support was contingent upon participation in the student paper competition or the poster sessions, either through the applicant's own research project, or as a representative of a student chapter depicting the chapter's activities. Following are the travel grant recipients :

Shannon Bell	University of Oregon
Francisco Brenes	University of Texas at Austin
Zhiyan Cheng*	University of Nevada, Reno
Hoon Choi*	University of Nevada, Reno
Robert Corbin*	University of Nevada, Reno
Ersan Eldelek*	University of Nevada, Reno
Luis Fargier-Gabaldon	University of Michigan
Sarah Gonzalez	Southwest Research Institute
Monique Hite	Georgia Tech
Rita Johnson*	University of Nevada, Reno
Payam Khashaee**	Southern Methodist University
William Kirkham	Oregon State University
Anna Lang	University of California at San Diego
Andre Markarian***	Georgia Institute of Technology
Chris Meisl	University of British Columbia
Andrew Seeton	University of British Columbia
Luis Montejo	University of Puerto Rico
Sai Bhaskar Peyyeti	University of Toledo
Ryan Smith	University of Oregon
Patxi Uriz	University of California at Berkeley

*Five UNR students are sharing one grant

**Graduate student paper competition author

***Undergraduate student paper competition author

Announcement

Conference on Seismic Risk in Developing Countries

Hosted by the government of India's Disaster Management Institute, the International Conference on Managing Seismic Risk in Developing Countries will be held March 17-19, 2004, in the city of Bhopal (city of lakes) in central India. The objective of the conference is to provide a platform for technologists, administrators, and disaster management professionals to review and evaluate recent developments in technology and experiences in earthquake disaster management relevant to developing countries, with a view to enhancing their efforts at combating such disasters effectively. The main themes of the conference will be earthquake engineering practices in developing countries, earthquake seismology, and social and economic issues.

For the conference registration form and more information, visit www.dmibpl.org/int-conf.htm.

News of the Membership

Mohraz Named President of AEI



Bijan Mohraz

EERI member Bijan Mohraz, chair of the Environmental and Civil Engineering Department at Southern Methodist University (SMU), Dallas, Texas, has been named 2004 president of the Architectural Engineering Institute (AEI) of the American Society of Civil Engineers (ASCE).

Professor Mohraz received BSCE, MSCE, and Ph.D. degrees at the University of Illinois at Urbana-Champaign. He has focused his teaching in the field of structural engineering, while his research has focused on earthquake engineering, structural analysis, and design. From 1994 to 1998, while on leave from SMU, Mohraz was a visiting scholar at the National Institute of Standards and Technology (NIST), collaborating with the staff of the Building and Fire Research Laboratory to improve seismic design guidelines and specifications.

Mohraz is the author or co-author of more than 85 publications. He has been the recipient of a number of teaching awards as well as research grants from the National Science Foundation and NIST, and has served as a consultant to both government and private industry. For the past nine years he has served as the editor of the ASCE *Journal of Architectural Engineering* and is currently serving on AEI's Board of Governors.

Announcements

Conference on Earth Fissures

Hosted by the Engineering Geology Foundation and the Association of Engineering Geologists, the Earth Fissures Conference will be the inaugural Shlemon Specialty Conference in Engineering Geology and will be held in El Paso, Texas, April 1-3, 2004. It is the first in a series of specialty conferences made possible by a generous contribution from Dr. Roy Shlemon. It will consist of oral presentations by selected experts, volunteered oral and poster presentations by conference attendees, a full-day field trip, and a half-day wrap-up session. Topics include processes leading to fissure formation, fissure classification and evolution, prediction of fissure development and growth, effects of fissures on the built environment, and mitigation of fissure hazards for engineered structures. The field trip will examine and discuss two sets of enigmatic earth fissures near Fort Hancock and Red Light Draw. For more information, visit www.haneberg.com/fissure/.

7th Workshop on Seismic Waves

The Abdus Salam International Centre for Theoretical Physics (ICTP), in collaboration with the Department of Earth Sciences of the University of Trieste, will host the Seventh Workshop on Three-Dimensional Modeling of Seismic Wave Generation, Propagation, and Inversions, October 25-November 5, 2004. The workshop will provide training in advanced methodologies of R&D in fundamental studies of the earth's evolution and dynamics, and in numerous applied problems, such as estimation and mitigation of possible seismic hazards. The workshop will focus on both the methodology and results of interpretation of seismic observations.

Attendees will participate in computer demonstrations and exercises. Topics of the exercises will be frequency-time analysis, modeling of seismic responses of layered media, source mechanism interpretation using seismic wave data, 2-D and 3-D seismic tomography, earth's seismicity, wave propagation across the earth, and seismological databases. A degree in physics, mathematics, geophysics (theoretical or computational), computer science, or a similar discipline is required.

There is no registration fee. The total number of participants in the workshop is limited. For an application form (due by May 28, 2004) visit agenda.ictp.trieste.it/smr.php?1586.

Publication

SF Bay Area Earthquake Probabilities

The U.S. Geological Survey recently issued Fact Sheet 039-03 entitled *Is a Powerful Quake Likely to Strike in the Next 30 Years?* (geopubs.wr.usgs.gov/fact-sheet/fs039-03/). It summarizes the major findings of a report issued in April 2003 containing revised estimates of earthquake probabilities for the greater San Francisco Bay Area. That report, titled *Earthquake Probabilities in the San Francisco Bay Region: 2002-2031 (USGS Open-File Report 03-214, geopubs.wr.usgs.gov/open-file/of03-214/)*, drew on new data and new methodologies, and concluded that there is a 62% probability of a major, damaging earthquake striking the region over the next 30 years (2002-2031). This conclusion was developed from a comprehensive analysis that involved input from a broadly-based group of geologists, seismologists, and other earth scientists representing government, academia, and the private sector, convened by the USGS. Earthquakes in the San Francisco

Bay region result from strain energy constantly accumulating across the region because of the northward motion of the Pacific Plate relative to the North American Plate. The region experienced large and destructive earthquakes in 1838, 1868, 1906, and 1989, and future large earthquakes to relieve this continuously accumulating strain are inevitable.

The results of this study are used in estimating seismic hazard in the San Francisco Bay region and in estimating the intensity of ground shaking expected for specified "scenario" earthquakes (maps of these shaking intensity scenarios are available on the Web at quake.usgs.gov/research/strongmotion/effects/shake/archive/scenario.html). In addition, the results in this report form the basis for calculating earthquake insurance premiums, for planning and prioritizing expenditures for seismic upgrades of structures, and in developing the seismic design criteria in building codes.

Faculty Position

Geosystem Science

The Department of Earth Sciences at the University of Southern California seeks candidates for tenure-track positions in quantitative analyses of geosystems. Areas of interest include, but are not limited to, landscape evolution, climate dynamics, magmatic processes (both modern and ancient), and theoretical and observational seismology. The level of the appointment is open. Applicants who bridge the interface between numerical and field-based studies are especially encouraged to apply. For more information, contact Thomas L. Henyey, Chair, Department of Earth Sciences, University of Southern California, Los Angeles, CA 90089-0740. Application review began on January 15, 2004, and will continue until the positions are filled.

CALENDAR

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

FEBRUARY

4-7. EERI Annual Meeting, Los Angeles, CA. (1/04).

9-11. 4th Nat'l Conf. on Bridges and Highways, Memphis, TN. Info: www.conferences.uiuc.edu/seismic (8/03)

19-21. World Conf. on Natural Disaster Mitigation, New Delhi, India. Info: www.wfeo-cee.org (7/03)

20-21. PEER Annual Meeting, Palm Springs, CA. Info: peer.berkeley.edu (10/03)

MARCH

5-6. Asia Conf. on EQ Eng, Manila, Philippines. Info: www.aseponline.org/ACEE.htm (10/03)

17-19. Conf. on Managing Seismic Risk in Developing Countries, Bhopal, India. See page 9. (2/04)

19-21. New Zealand Society of EQ Eng. Annual Conf., Rotorua, New Zealand. Info: secretary@nzsee.org.nz (1/04)

22-25. Performance-Based EQ Eng. and Seismic Retrofit of Structures, Brooklyn, NY. Info: sections.asce.org/metropolitan/tech_groups/infrastructure.html (12/03)

APRIL

1-3. Earth Fissures Conf., El Paso, TX. See page 10. (2/04)

13-17. 5th Int'l Conf. on Case Histories in Geotech. Eng., New York, NY. Info: www.umd.edu/~eqconf/ **5thCHConf** (1/03, 3/03)

MAY

3-5. 4th Annual Disaster-Resistant California Conf., Sacramento, CA. Info: www.drc.ca.gov (12/03)

7. 2004 L.A. Tall Buildings Conf., Los Angeles, CA. Info: www.tallbuildings.org

TallBuildings.org (12/03)

16-19. Basin and Range Province Seismic Hazard Summit II, Reno NV. Info: www.nbmng.unr.edu (12/03)

16-19. Third UCLA Conf. on Public Health and Disasters, Torrance, CA. Info: www.ph.ucla.edu/cphd/conference.html (12/03)

20-21. NEES Annual Meeting, San Diego, CA. Info: www.nees.org (11/03)

22-26. Structures 2004, Nashville, TN. Info: www.asce.org/conferences/structures2004/ (8/02)

JUNE

7-10. SEM X Int'l Cong. on Experimental and Applied Mechanics, Costa Mesa, CA. Info: www.sem.org (10/03)

10-11. 4th Int'l Workshop on Structural Control, Columbia Univ., NY. Info: www.civil.columbia.edu/4IWSC (11/03)

20-23. 14th World Conf. on Disaster Management, Toronto, Canada. Info: www.wcdm.org/ (11/03)

JULY

6-9. Int'l Symp. Network & Center-Based Research for Smart Structures Tech. & EQ Eng., Osaka, Japan. Info: mahua@rch.eng.osaka-u.ac.jp (12/03)

12-15. 3rd European Conf. on Structural Control, Vienna, Austria. **Abstract deadline extended to Feb. 29.** Info: www.samco.org/3ecsc (10/03)

18-23. Composite Construction in Steel and Concrete V, Kruger National Park, South Africa. Info: www.engconfintl.org/4ab.html (12/02)

26-28. ASCE Specialty Conf. on Probabilistic Mechanics and Structural Reliability, Albuquerque, NM. Info: www.esc.sandia.gov/PMCconferenceinfo.html (12/03)

AUGUST

1-6. 13th World Conference on EQ Eng. (13WCEE), Vancouver, British Columbia, Canada. Info: www.13wcee.org

13wcee.com (7/02, 3/03)

8-11. MOVIC 04 Motion and Vibration Control Conf., Washington University, St. Louis, MO. (11/02)

SEPTEMBER

14-17. NDE/NDT for Highways and Bridges 2004, Buffalo NY. Info: www.asnt.org/events/events.htm (12/03)

29-October 1. Annual Conf. on Deep Foundations, Vancouver, B.C., Canada. Info: www.dfi.org (12/03)

OCTOBER

25-November 5. 7th Workshop on 3-D Modelling of Seismic Waves, Trieste, Italy. See page 10. (2/04)

DECEMBER

8-20. 4th Int'l Conf. on Dam Engr., Nanjing, China. Info: www.dam04.com (1/04)

2005

JANUARY

13-16. Int'l Symp. on EQ Eng., Japan. See page 3. (2/04)

FEBRUARY

19-22. Int'l Assoc. for Bridge Struct. Eng. Conf., New Delhi, India. Info: www.iabse.org (11/03)

2006

APRIL

17-21. 8th U.S. Nat'l Conf. on EQ Eng. (8NCEE) and EERI Annual Meeting, San Francisco, CA. (8/03)

Announcements

USSD Scholarship

Applications for the 2004 United States Society on Dams (USSD) Scholarship are being accepted. The USSD scholarship is a one-time award of \$10,000. Applications are encouraged from all fields of study related to USSD technical activities, including civil engineering, environmental and social sciences, and water resources management. The application deadline is February 20, 2004. For application details, visit www.usstdams.org.

News of the Institute

***Spectra* Outstanding Paper Award for 2002 Goes to Borchardt**

“Empirical Evidence for Site Coefficients in Building Code Provisions” by Roger D. Borchardt was recognized by EERI’s Honors Committee as the Outstanding Paper in Volume 18 of *Earthquake Spectra*. Borchardt will receive his award on February 5 during EERI’s Annual Meeting in Los Angeles. The paper was published in the May 2002 issue.

This paper is a thorough analysis of the site amplification effects reflected in strong-motion recordings from the Northridge earthquake, and includes a useful summary of work by other investigators.

The reviewers’ comments were as follows: “This paper is an important contribution to professional practice, specifically to the evaluation of site factors or coefficients currently used in building codes...This is an important paper reflecting new results. The author has been careful with his analyses, treating the significant issues with care and precision... Excellent presentation of Northridge results.”

Borchardt previously received the



Roger Borchardt

Outstanding Paper award in 1994. He is an engineering seismologist and geophysicist at the U.S. Geological Survey in Menlo Park, California. He has a consulting professor appointment at the John A. Blume Earthquake Engineering Center, Stanford University. The author of 168 scientific publications, he has served in a variety of scientific leadership roles at the USGS, on various advisory panels, and on earthquake investigation teams.

An EERI member since 1973, Borchardt is an honorary member of the Institute and has been the editor of *Earthquake Spectra* as well as EERI vice president.

Announcement

New NSF Program

The National Science Foundation has announced a new program solicitation inviting proposals for its first full competition in the human and social dynamics (HSD) priority area. Its aim is to foster breakthroughs in knowledge about human action and development as well as organizational, cultural, and societal adaptation and change in a comprehensive and multidisciplinary context across the sciences, engineering, and education. The FY2004 HSD Competition will include three topical emphasis areas (agents of change, dynamics of human behavior, and decision making and risk) and three resource-related emphasis areas (spatial social science, modeling human and social dynamics, and instrumentation and data resource development). Support will be provided for research-focused, education-focused, infrastructure-focused, and exploratory projects.

Visit www.nsf.gov/home/crssprgm/hsd for information about the program, the mandatory Letter of Intent (March 3, 2004 deadline), and proposal submission (March 30, 2004 deadline).



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