

**EARTHQUAKE ENGINEERING  
RESEARCH INSTITUTE**

**NEWSLETTER**

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## News of the Institute

### Nominations for 2001 Distinguished Lecturer

Since 1992, EERI has honored leaders in the earthquake professions through the annual Distinguished Lecturer Award. This year's awardee is Joseph Penzien of International Civil Engineering Consultants. The lecture is presented at the Annual Meeting and at a series of meetings nationwide. The lecture is also published in EERI's technical journal, *Earthquake Spectra*.

The Honors Committee will meet during the EERI Annual Meeting in St. Louis to begin to consider candidates for the Distinguished Lecturer Award for 2001. Please submit your written nominations to the Honors Committee, in care of the EERI office, by May 20.

## News of the Institute

### Last Call for 52nd Annual Meeting: Low Airfares May Be Available

Beginning on the evening of May 31, earthquake engineers, scientists, planners, architects, and policy makers will convene for three days at the Adam's Mark Hotel in St. Louis for EERI's 52nd Annual Meeting. Southwest Airlines MIGHT still have discount roundtrip airfares of approximately \$220 from the West Coast available for Tuesday/Wednesday/Saturday travel. Check their web site at [www.southwest.com](http://www.southwest.com).

Participants will hear the nation's foremost experts reflect on *Reducing Losses for Infrequent but High-Consequence Earthquakes*. Among the highlights will be sessions dealing with the past and future in hazards mitigation, building and transportation retrofit issues, the seismic hazard in Mid-America, and insuring against losses in the region. The future of earthquake engineering will be the subject of a thought-provoking panel discussion. A stimulating debate will wrestle with whether or not research has served the needs of earthquake engineering. There will also be a technical overview of the Taiwan and Turkey earthquakes and a tribute to Otto Nuttli, the father of the New Madrid Seismic Zone. Joseph Penzien, Professor Emeritus from the University of California, will deliver the 2000 Distinguished Lecture on "Earthquake Engineering of Transportation Structures: Past, Present and Future."

Participants will also receive the conference notebook, three lunches, the banquet, a field trip to the research labs at Washington and St. Louis Universities OR a walking tour of important St. Louis structures, and a field trip to the recently retrofitted Anheuser Busch Brewery.

This invigorating week will be topped off by the opportunity to purchase tickets to see major league baseball on June 3 — Mark McGwire and the St. Louis Cardinals will play the Cleveland Indians at Busch Stadium. Whether this is your first or 52nd EERI Annual Meeting, it promises to be challenging and memorable. All EERI members should have received the program brochure containing meeting and hotel registration forms in the mail. For your convenience, this *Newsletter* contains a meeting registration form, which also has information about the many attractions in St. Louis that might be of interest to participants' family members. For more information, contact the EERI office. On-line registration is available on the EERI web site at [www.eeri.org](http://www.eeri.org).

*Trans World Dome in St. Louis*



## National Earthquake Hazards Reduction Program

### News of the Profession

#### NSF Seeks NEES Program Director

The Directorate for Engineering announces a nationwide search to fill a Program Director position at the National Science Foundation (NSF) in the Division of Civil and Mechanical Systems (CMS). This Program Director position is for the Project Manager for the Network for Earthquake Engineering Simulation (NEES) Program.

The NEES Program is administered by the Directorate for Engineering through the Division of Civil and Mechanical Systems. It will be coordinated by the NEES Program Director through the NEES Management and Oversight Board (MOB).

Through the NEES Program, NSF expects to fund up to 25-30 earthquake engineering equipment sites with grants and cooperative agreements. Total funding for the NEES project, including experimental equipment, the NEES network, and a NEES Consortium, is \$81.9 million over the fiscal years 2000-2004. The NEES equipment sites and network are expected to be operational by September 30, 2004 and will be operated by the NEES Consortium as cooperating laboratories through September 30, 2014. Further information on the NEES Program is available at [www.eng.nsf.gov/nees](http://www.eng.nsf.gov/nees).

The NEES Project Manager will provide NSF-level project management for all NEES equipment awards. Applications for the NEES Project Manager position should be directed to: Ken P. Chong, CMS Personnel Search Coordinator, Directorate for Engineering, National Science Foundation, 4201 Wilson Boulevard, Room 545, Arlington, Virginia 22230; phone 703/306-1361; fax 703/306-0291; e-mail [kchong@nsf.gov](mailto:kchong@nsf.gov). The full text of this job announcement is document eng0009 available from the NSF Online Document System at [www.nsf.gov/cgi-bin/getpub?eng0009](http://www.nsf.gov/cgi-bin/getpub?eng0009).

#### NSF Seeks Geophysics Program Director

The National Science Foundation, Division of Earth Sciences, is seeking qualified candidates for a Program Director in the Geophysics Program.

This position is to be filled on a one-year Intergovernmental Personnel Act assignment. Applicants must be permanent, career employees of eligible organizations for at least 90 days prior to entering into a mobility assignment agreement with NSF and the individual's institution. Salary and appropriate fringe benefits continue through the home institution, but are reimbursed by NSF.

Applicants must have a Ph.D. or equivalent experience in geophysics or a closely related earth sciences field. The vacancy requires at least six years of successful research, research administration or managerial experience beyond the Ph.D. pertinent to the position. A broad general knowledge of earth sciences research, familiarity with the U.S. scientific community and experience in an academic setting are also desirable. For someone with less research experience the program could consider hiring at the Associate Program Director level.

Applicants interested in the position can find a copy of the vacancy announcement (EX00-44 IPA) on NSF's website at [www.nsf.gov/pubs/2000/vex0044/vex0044.txt](http://www.nsf.gov/pubs/2000/vex0044/vex0044.txt). For more information about the position or how to apply, call or e-mail Robin Reichlin (Program Director, Geophysics), at 703/306-1556 or [rreichli@nsf.gov](mailto:rreichli@nsf.gov). Applicants can also contact Jim Whitcomb, Acting Division Director, at 703/306-1550.

#### FEMA Seeks Building Science Engineer or Architect

The Federal Emergency Management Agency (FEMA) has announced a vacancy in the Building Science and Assessment Branch within the Mitigation Directorate, Program Assessment and Outreach Division, for a building science engineer or architect.

The selected candidate will be responsible for the development of program policies, policy guidance, technical standards, and technical guidance on strategies to minimize the risk of damage to the built environment from all natural hazards. The candidate will work with others to identify research and development needs in the areas of flood, earthquake, and wind-resistant design and construction practices and hazard risk assessment.

Other duties include providing technical support to FEMA's Emergency Management Institute in the development of technical training, and supporting disaster operations by responding to building science needs of Emergency Response Teams and Emergency Support Teams as assigned. The application deadline is May 26, 2000. The complete vacancy announcement (RB-00-122-CAR) may be found at [http://www.fema.gov/career/get\\_desc.cfm?id=1301](http://www.fema.gov/career/get_desc.cfm?id=1301).

## News of the Profession

### SCEC INSTANeT News

The Southern California Earthquake Center (SCEC) announces SCEC INSTANeT News, a new feature of the SCEC Webservice that will feature weekly coverage of earthquake research and news. SCEC INSTANeT articles will be announced via e-mail as a short news "byte", with a link to a longer article, commentary, interview, announcement, event description, etc. at [www.scec.org/instanet](http://www.scec.org/instanet). The SCEC INSTANeT News website and e-mailed "bytes" replace the SCEC Quarterly Newsletter (SQN). All current SQN Subscribers will receive a refund for issues beyond SQN 5.2, and have been automatically added to the INSTANeT News e-mail list. Subscription/Unsubscription instructions for the SCEC INSTANeT News e-mail list are online at [www.scec.org/instanet/subscribe.html](http://www.scec.org/instanet/subscribe.html).

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## Publications

### Proceedings: International Conference on Steel-Concrete Composite Structures

The Sixth ASCCS (Association for International Cooperation and Research in Steel-Concrete Composite Structures) International Conference was recently held in Los Angeles. The conference proceedings include 146 technical papers in two volumes of 1200 pages.

The proceedings can be purchased through the Department of Civil Engineering, University of Southern California (Attn.: ASCCS-6 Secretariat), Los Angeles, CA 90089-2531, or contact [yanxiao@usc.edu](mailto:yanxiao@usc.edu).

## News of the Institute

### Mayes Elected Secretary-Treasurer

Consulting engineer Ronald L. Mayes of Moraga, California, was elected by the Board of Directors at its March meeting to serve as EERI's next Secretary-Treasurer. He stated that he accepted this position because of his belief that "EERI makes a significant contribution to our profession, and as a consequence we as members have a responsibility to make a contribution to the organization to ensure its ongoing success."

Craig Comartin, a consulting engineer, has retired from the EERI Board of Directors after serving as Secretary-Treasurer for six consecutive years, the maximum term stipulated by EERI's Bylaws. During his tenure, the Institute's financial base has remained secure. He has affirmed that these years of service have been exceptionally gratifying to him. EERI is greatly indebted to Comartin for his numerous contributions and astute advice. We look forward to his continued service in other capacities.

Ron Mayes has twenty-seven years of management and technical expertise in earthquake and structural engineering. In 1982, he co-founded and became President of Dynamic Isolation Systems, Inc. (DIS). DIS was founded to design, manufacture and market seismic isolation technology that was originally developed in New Zealand. Mayes has played a significant role in the acceptance of seismic isolation technology in building, bridge, and hospital design codes in the United States.

He has also directed and executed numerous projects involving test programs, criteria development, and correlation of experimental and analytical data. He has been actively involved in experimental research and code development for masonry design. He has served on the Boards of Directors of the Structural Engineers Association of Northern California and The Masonry Society. Early in his career (1979-81), he served as Executive Director of the Applied Technology Council.

Mayes earned his bachelor's degree in civil engineering in 1969 and his Ph.D. in 1972 from the University of Auckland in New Zealand, and was a post-doctoral research engineer at the Earthquake Engineering Research Center at the University of California, Berkeley. He holds dual citizenship in New Zealand and the United States.

*Ronald L. Mayes*

*Craig D. Comartin*

## News of the Institute

### EERI Urges Support for Congressional Natural Hazards Congress

EERI President Christopher Arnold recently wrote a letter to California Senators Boxer and Feinstein urging them to support the Congressional Natural Hazards Caucus. The text of the letter is included below and is also posted on EERI's web site at [www.eeri.org](http://www.eeri.org). EERI is encouraging members to download and modify this letter and send it to their own senators. Address information for all Senators is available at the web site [www.senate.gov](http://www.senate.gov).

*We are writing to ask you to support the effort initiated by Senators Ted Stevens and John Edwards to establish a Congressional Natural Hazards Caucus. Because jurisdiction for natural hazards is spread across many congressional committees and the responsibility to mitigate or respond to disasters falls to many federal agencies, the development of a caucus on natural hazards offers an opportunity to coordinate future mitigation programs across committees and agencies.*

*During the past two decades the costs of natural disasters have risen dramatically, exceeding \$500 billion. More than half the nation's population resides along or near a coast and, as you are well aware, population growth in seismic areas in California and the northwest is continuing at a rapid pace. Thirty-nine of the fifty states have some earthquake risk; more than 75 million people live in metropolitan areas of moderate to high seismic risk. While California is certainly at greatest risk, the problem extends beyond our borders. It is estimated that 46 million people live in seismic hazard areas outside California.*

*The Earthquake Engineering Research Institute (EERI) is a national, non-profit, technical society comprised of more than 2500 engineers, geoscientists, architects, planners, public officials, and social scientists. EERI's mission is to reduce earthquake risk by advancing the science and practice of earthquake engineering, by improving understanding of the impact of earthquakes on the physical, social, economic, political and cultural environment, and by advocating comprehensive and realistic measures for reducing the harmful effects of earthquakes.*

*EERI is pleased to join with many other professional associations in the earth science, engineering, and disaster fields in support of this caucus. We urge you to join Senators Stevens (AK) and Edwards (NC) in working to establish a dialogue that will enable all levels of government to reduce losses in future natural disasters. Please know that EERI and our members would be happy to assist you and your staff on issues dealing with earthquake risk reduction at any time.*

## News of the Profession

### MCEER Strategic Partnerships Network

The Multidisciplinary Center for Earthquake Engineering Research (MCEER) recently announced its Strategic Partnerships Network, which aims to unite business, industry and government participants to enhance the study, development and application of advanced technologies and reduce earthquake damage and losses nationwide.

MCEER's Strategic Partnerships Network features three levels of membership: Flagship Partner, Premier Partner, and Partner, each with its own array of Network benefits.

It also includes Specialty Interest Groups (SIGs) or "communities of interest," centered around various technologies being studied by researchers at MCEER. These include: Site Remediation, Structural Control, Advanced Systems Analysis and High-Performance Materials, Condition Assessment, and Decision Support Systems.

For information on the MCEER Strategic Partnerships Network, including membership costs and benefits, contact Donald J. Goralski at MCEER, University at Buffalo, Red Jacket Quadrangle, Buffalo, NY 14261; phone 716/645-3391 ext. 108; fax 716/645-3399; e-mail [goralski@acsu.buffalo.edu](mailto:goralski@acsu.buffalo.edu), or visit the "Partnerships" section on the MCEER web site at [mceer.buffalo.edu](http://mceer.buffalo.edu).

## News of the Profession

### Job Opportunities

**Geomatrix Consultants**, Oakland, California. Staff Seismologist in the Geotechnical Engineering and Earth Sciences Group to work as part of the seismic hazard analysis team.

An M.S. or Ph.D. in geophysics/seismology is required, and candidates are expected to be familiar with at least one of the following: analysis of global earthquake catalogs, relocation of earthquakes, waveform inversion for source mechanism, and simulation of wave propagation in a 3-D crustal struc-

ture. Initial duties include earthquake data analysis, managing technical aspects of a project, and report preparation. Contact: Geomatrix Consultants, 2101 Webster Street, 12th Floor, Oakland, CA 94612, Attn: Human Resources; fax 510/663-6361. Refer to Job #00-GEES02.

## News of the Membership

### GeoHazards International Receives Award from the King of Nepal

On March 31, Brian Tucker, President of GeoHazards International (GHI) and an EERI member since 1982, received from the King of Nepal the "Prabal Gorakha Dakshin Bahu" ["Right hand of Gorkha"] award (see photo at right). This is the highest award given by the King for contributions to Nepal and the Nepali people.

GeoHazards International and the Nepalese non-profit organization National Society for Earthquake Technology—Nepal (NSET) have been collaborating since 1993 on mitigating the extraordinarily high level of earthquake risk faced by Nepal. Since 1997, these two organizations have been implementing the Kathmandu Valley Earthquake Risk Management Project (KVERMP) with partial funding from the Office of Foreign Disaster Assistance (OFDA) of the USAID, under the direction of the Asian Disaster Prevention Center.

KVERMP includes the development of an earthquake scenario and action plan for reducing the earthquake risk, awareness raising including the creation of an annual Earthquake Safety Day, and training and education for increased capability of municipal institutions in earthquake emergency management.

Last year, GHI and NSET continued their collaboration by conducting a school earthquake safety program to strengthen the school buildings in one village in the Kathmandu Valley, to develop and practice an emergency response plan for the school, and to train local masons on earthquake-resistant construction and retrofits.

The award given to Brian Tucker is in recognition of the work of the staff and Board members of both



GHI and NSET in cooperation with their partners in Nepal and abroad, including EERI members Shirley Mattingly and L. Thomas Tobin.

NSET and GHI are seeking to continue their work this year, in particular the school seismic safety program. Funding is being provided by OFDA, the UN Center for Regional Development, the Singapore International Foundation, and members and supporters of GHI.

Additional information about these organizations and their work can be found at [www.geohazards.org](http://www.geohazards.org) and [www.nset.org.np](http://www.nset.org.np).

## News of the Profession

### MCEER Appoints Higgins to Transportation Research Post

The Multidisciplinary Center for Earthquake Engineering Research (MCEER) has named Michael S. Higgins Senior Program Officer for Transportation Research. Higgins will coordinate the center's Highway Project, which is sponsored primarily by the Federal Highway Administration (FHWA). Higgins joins MCEER from the American Society of Civil Engineers, Civil Engineering Research Foundation (CERF), in Washington, D.C. There he served as project manager for the Highway Innovative Technology Evaluation Center (HITEC), managing expert panel reviews and independent product evaluations of innovative technologies for the U.S. bridge and highway industry.

MCEER's Highway Project seeks to improve the seismic performance and reliability of the nation's highway system by examining earthquake impacts on the highway system as an integrated network. Additional information on MCEER's Highway Project can be found at the web site [mceer.buffalo.edu/research/HighwayPrj/](http://mceer.buffalo.edu/research/HighwayPrj/).

## Announcements

### Session on Hazard Management Technology

The 17th International Symposium on Automation and Robotics in Construction will be held in Taipei, Taiwan at the Grand Hotel on September 18-20, 2000. In memory of last year's Chi-Chi earthquake, a special session entitled "Hazard Management Technology" has been created for this year's symposium. This new session is organized by B.-J. Shih and Y.-F. Li of the National Taipei University of Technology. The following themes have been selected: Automated Warning and Monitoring of Hazardous Situation in Construction; Automated Response Systems and Emergency Service for Construction Hazard; Hazard Management Technology; Communication Strategy in Disaster Situations; Knowledge Base and Decision Support for the Reduction of Hazards; and Real-time Response System for Hazard Mitigation. For more information, see the web site [www.ce.ntu.edu.tw/~isarc17](http://www.ce.ntu.edu.tw/~isarc17).

## News of the Institute

### New Endowment Project: Encyclopedia of Housing Construction Types in Seismically-Prone Areas of the World

EERI's Endowment Fund and the International Association of Earthquake Engineering are supporting a new project to develop an encyclopedia of both vernacular and engineered housing construction types in seismically-prone areas of the world. This new project will use the expertise of EERI members as well as others interested in gaining a better understanding of the various housing types in the world that are vulnerable to earthquakes. The encyclopedia will provide basic information on seismic vulnerability of housing, useful to local, national and international public and private organizations and individuals concerned with improving the seismic resistance of a region's housing stock.

The project will develop a global categorization of characteristic housing construction types, and will present this information in a standardized comparative form, which will be made available through EERI's web site. Each participant will present information using the standardized forms. The encyclopedia will include the following information for each major type of housing construction in each country:

- A description of key structural features illustrated with perspective drawings, photographs, or both;
- A description of the construction process and building materials;
- A description of seismic strengths and deficiencies;
- The prevalence of the construction within a country and housing occupancy;
- A summary of existing retrofit schemes.

EERI is actively seeking participants for this project who would be willing to contribute information on the housing in various countries. As of this writing, over 70 people representing 36 countries have volunteered.

A brochure describing the project in more detail is available from the EERI office, and a detailed project scope is available via e-mail, by writing Marjorie Greene of the EERI staff at [mgreene@eeri.org](mailto:mgreene@eeri.org).

Examples of both rural and urban housing construction types are currently being developed for India and Mexico, and these completed forms are expected to be posted on EERI's web site in May to provide guidance to other participants.

The project chair is Svetlana Nikolic-Brzev, British Columbia Institute of Technology, Vancouver, Canada. Steering committee members are: Sergio Alcocer, Institute of Engineering at UNAM and National Center for Disaster Prevention, Mexico; Christopher Arnold, EERI President and Building Systems Development, Inc.; Marjorie Greene, EERI Special Projects Manager; Farzad Naeim, John A. Martin and Associates, and member, EERI Endowment Committee; and Susan Tubbesing, EERI Executive Director (ex-officio).

If you would like to join this project, please send an e-mail to Svetlana Brzev at [sbrzev@bcit.ca](mailto:sbrzev@bcit.ca) or Marjorie Greene at [mgreene@eeri.org](mailto:mgreene@eeri.org).



## Publications

### *The Mathematics of Natural Catastrophes*

The Mathematics of Natural Catastrophes is the title of a new book written by EERI member Gordon Woo, who has been a technical consultant for EQE International for ten years. This book, published by the World Scientific Publishing Co., differs from most books on natural hazards by having a focus on quantitative issues, especially those associated with risk assessment. The treatment of uncertainty is elaborated in detail, which should be helpful to those earthquake engineers with a more deterministic background.

Special chapters are included on insurance and banking as sources of funding for hazard engineering studies, recognizing the growing importance of these financial organizations. The 304-page book can be ordered from [www.amazon.com](http://www.amazon.com) for \$48 plus shipping.

### Design Loads Standard, ASCE 7-98

The American Society of Civil Engineers (ASCE) announces the release of Minimum Design Loads for Buildings and Other Structures, ASCE 7-98, a major revision of ANSI/ASCE 7-95. This widely used standard provides requirements for dead, live, soil, flood, wind, snow, rain, ice, and earthquake loads, and their combinations, that are suitable for inclusion in building codes and documents. ASCE 7-98 is available as a printed book or as an interactive CD ROM. Each costs \$89, or both can be purchased as a set for \$135. For more information, contact Betsy Shepard at [eshepard@asce.org](mailto:eshepard@asce.org) or 703/295-6266, see the ASCE Publications web site at [www.pubs.asce.org](http://www.pubs.asce.org).

## News of the Membership

### Armen Der Kiureghian Receives CERRA Award

Armen Der Kiureghian, Professor of Civil and Environmental Engineering at the University of California at Berkeley and an EERI member since 1979, has received the 1999 Civil Engineering Risk and Reliability Association (CERRA) Award. Given every four years, the award honored Der Kiureghian for his "outstanding contributions to the theory of structural reliability." The award was presented at the International Conference on Applications of Statistics and Probability in Civil Engineering in Sydney, Australia.



*Armen Der Kiureghian*

## Announcements

### Postearthquake Highway Response and Recovery

Recognizing the seismic hazard in the New Madrid region, several organizations have come together to sponsor a Postearthquake Highway Response and Recovery Seminar that will be held September 5-8, 2000 in St. Louis, Missouri. The Seminar is sponsored by the Federal Highway Administration, the Missouri and Illinois Departments of Transportation, the Missouri and Illinois State Emergency Management Agencies, the Mid-America Earthquake Center, the Central US

Earthquake Consortium, the University of Missouri, the Consulting Engineers Council of Missouri, the Multidisciplinary Center for Earthquake Engineering Research, and the Missouri Society of Professional Engineers.

The purpose of the Seminar is to assist state and local highway agencies in Mid-America in understanding the issues related to emergency preparation and response to a major earthquake and also to present ideas to help minimize response and recovery times for restoring operations on highways.

On-line registration for the seminar is available at [www.fhwa.dot/odiv/quake.htm](http://www.fhwa.dot/odiv/quake.htm). The cost is \$100 for government and educational personnel and \$150 for others. For more information, contact Don Neumann at the Federal Highway Administration at 573/636-7104.

### CUREe-Caltech Woodframe Project RFP

The California Universities for Research in Earthquake Engineering (CUREe) has issued a Request for Proposals (RFP) as part of the CUREe-Caltech Woodframe Project, which is primarily funded by the Federal Emergency Management Agency through the California Office of Emergency Services. The RFP, "Case Studies of the Earthquake Performance of Woodframe Buildings," solicits proposals from experts who have already studied a particular wood building or buildings that have experienced a major earthquake. The 1994 Northridge earthquake is the event of central interest, and it is expected that most of the subcontracts will be awarded for case studies related to that earthquake. The goal is to compile from existing investigations a common set of data and judgments. Little additional fieldwork is

envisaged. The expected range of subcontract amounts for case studies, for each building or complex, is \$3,200 to \$5,400.

The deadline for proposals is May 15, 2000. For copies of the RFP, contact: Ericka Holmon, Administrative Assistant, Woodframe Project, CUREe, 1301 S. 46th Street, Richmond, CA 94804; phone: 510/231-9557; e-mail: [ericka@curee.org](mailto:ericka@curee.org). Information on the overall scope of the Woodframe Project can be obtained from the CUREe web site, [www.curee.org](http://www.curee.org).

### Workshop on 3-D Modeling of Seismic Waves

The Fifth Workshop on Three-Dimensional Modeling of Seismic Waves Generation, Propagation, and their Inversion will be held in Trieste, Italy on September 25 - October 6, 2000. The workshop is sponsored by the Abdus Salam International Center for Theoretical Physics and the Department of Earth Sciences of the University of Trieste. Topics to be addressed at the workshop include the theory of seismic wave propagation and modeling, seismic sources, state of stress of the Earth, structural studies, seismic hazards, and other related problems. The workshop will provide an excellent opportunity for participants to update their knowledge on modern techniques for seismic wave modeling, analysis, and interpretation.

There is no registration fee for attending the workshop, but space is limited due to the number of available computers for some of the demonstrations and exercises. Those wishing to participate in the workshop should complete and return a Request for Participation Form by May 31, 2000. The form is available from the web site [www.ictp.trieste.it](http://www.ictp.trieste.it) or via e-mail to [smr1241@ictp.trieste.it](mailto:smr1241@ictp.trieste.it).

## Publications

### Characterization of Ground Shaking for Seismic Design

The Applied Technology Council (ATC) announces the availability of the ATC-35-3 Report, *Proceedings: Workshop on Improved Characterization of Strong Ground Shaking for Seismic Design*. This 70-page report documents the technical presentations and decisions made at a two-day workshop held in Southern California, on July 30-31, 1997. The purpose of the workshop, attended by approximately 60 representatives from the structural engineering design and geoscience professions, was to identify recommended actions to improve how earthquake ground motion is characterized for use in seismic design, including codes for buildings and bridges.

The workshop included presentations on future trends and capabilities in earthquake engineering analysis and in strong-motion seismology, as well as plenary and working group discussions on immediate-, near-, and long-term activities for improving ground motion representation in engineering practice. Issues addressed included alternative ground motion parameters, on-demand hazard matrices and time histories, basin response, site response, ground motion duration, near-fault effects, fault-zone-trapped waves, and topographic effects. The workshop was sponsored by the U. S. Geological Survey.

Copies of the ATC-35-3 report can be obtained from the Applied Technology Council, 555 Twin Dolphin Drive, Suite 550, Redwood City, CA 94065 (phone: 650/595-1542; fax: 650/593-2320; e-mail: [atc@atccouncil.org](mailto:atc@atccouncil.org); web site: [www.atccouncil.org](http://www.atccouncil.org)). Price: \$35.00 per copy plus shipping and tax where applicable.

## News of the Institute

### C. Poland visits Notre Dame Student Chapter

The University of Notre Dame's Department of Civil Engineering and Geological Sciences and the EERI Student Chapter hosted EERI President-Elect Chris Poland for two days (March 30-31, 2000) as part of the Visiting Professionals Program. Poland participated in a variety of activities, including question and answer sessions with students on the rewards and challenges of being a consultant in today's earthquake engineering community. He also discussed the development of EERI at the student chapter level through a variety of outreach and grass roots activities. His visit was highlighted by two lectures: "Need for Better Analysis Tools and Evaluation Procedures," and "Achieving Acceptable Risk in Seismic Designs."



*Chris Poland with Notre Dame students and faculty.*

## Publications

### Performance-Based Design Incentives Report

In September 1999, EERI held a two-day workshop in Seattle focusing on the role and nature of incentives that might be applied to encourage the implementation of "Performance-Based Seismic Design" to achieve safer new and existing buildings. Funding was provided by the Federal Emergency Management Agency. The workshop brought together a diverse community of professionals interested in the possible development of financial incentives. Rarely has such a diverse group come together to discuss seismic issues, and for many, the opportunity to meet and interact with different professions was a highlight of the meeting. Each of the various disciplines represented (earthquake professions, banking, insurance, regulatory) approach and evaluate earthquake risks differently. There are many valid reasons for differing levels of attention to evaluating and reducing earthquake risk. Understanding these reasons is key to bringing more attention to the reduction of earthquake risk in the future. This workshop should be a first step in an ongoing effort to improve communication among the disciplines involved in creating financial incentives to promote seismic mitigation for new and existing buildings. A summary report has been prepared to capture the main ideas and recommendations resulting from the meeting, and is now available from the EERI office; phone 510/451-0905, e-mail [eeri@eeri.org](mailto:eeri@eeri.org).

## News of the Profession

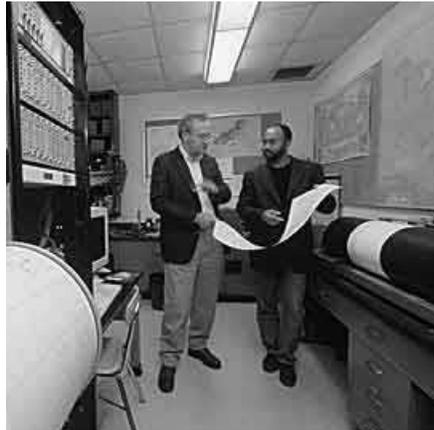
### New Earthquake Engineering Center for the Southeastern United States

The Earthquake Engineering Center for the Southeastern United States (ECSUS), was officially established at Virginia Tech in January, 2000. ECSUS currently consists of an interdisciplinary team of Virginia Tech researchers who have unique expertise and are actively involved in projects that address earthquake-related problems of critical importance to regional state governments, national research laboratories, and the private sector in the southeastern United States.

The Center currently consists of faculty and student researchers from the Departments of Civil Engineering, Geological Sciences, Electrical Engineering, Engineering Science and Mechanics, and Architecture. Fields of expertise include geotechnical and structural earthquake engineering, earthquake seismology, strong ground-motion modeling, seismic hazard assessment, GIS applications, and earthquake response planning and mitigation. The Center's co-directors are EERI members James Robert Martin II and Martin C. Chapman.

The primary roles of ECSUS are to perform basic and applied earthquake engineering research, manage transfer of seismic technology to the southeastern region, promote continued evolution of regional building codes, disseminate new findings to the regional engineering community, act as the regional earthquake data resource center, and provide a unified voice for regional earthquake issues.

For more information on ECSUS, see the web site, [ecsus.ce.vt.edu](http://ecsus.ce.vt.edu).



*ECSUS Co-Directors Martin Chapman and James Martin.*

## Obituary

### Boris Bresler

Boris Bresler, a structural engineering professor who pioneered techniques for analyzing seismic and fire hazards in reinforced concrete structures, died at his home in Israel on March 9, at the age of 81.

After earning his B.S. in Civil Engineering at the University of California at Berkeley, and his M.S. in Aeronautical Engineering at the California Institute of Technology, Bresler joined the U.C. Berkeley Civil Engineering faculty in 1946, where he taught for 32 years. At U.C. Berkeley, his research covered fire response of structures, earthquake safety of existing buildings, and shrinkage and temperature effects in concrete structures. He authored more than 70 technical papers and co-authored two textbooks on structural engineering.

Bresler retired from the U.C. Berkeley faculty in 1978 and joined the consulting engineering firm of Wiss, Janney, Elstner Associates, Inc. in San Francisco. As a principal in the company for 10 years, Bresler continued to develop design criteria for different types of structures, including high-rise buildings, offshore structures, industrial and nuclear power plant facilities, and to develop systematic procedures to evaluate seismic hazards and protect steel and concrete structures from fire.

Among numerous professional honors, Bresler was elected to the National Academy of Engineering in 1979 and was cited by *Engineering News Record* in 1982 for his contribution to the field of fire-protection engineering in the construction industry.

He also received the Wason Medal and the Joe W. Kelly Award from the American Concrete Institute and the State-of-the-Art of Civil Engineering Award of the American Society of Civil Engineers.

## Publications

### Special Offer: *Journal of EQ Engineering*

*The Journal of Earthquake Engineering*, in its fourth successful year, is a quarterly publication of peer-reviewed papers on research and development in analytical, experimental and field studies of earthquakes from an engineering seismology as well as a structural engineering viewpoint. EERI members A.S. Elnashai and N.N. Ambrose are the journal's editors.

A special promotion of the journal is underway. New subscribers will receive a free copy of *The Science*

*of Structural Engineering* by Jacques Heyman of the University of Cambridge. This book deals with a technical subject, but the presentation is completely non-mathematical. It makes available to the engineer, the architect, and the general reader the principals of structural design. The *Journal of Earthquake Engineering* is published by Imperial College Press and distributed by World Scientific Publishing. For more information or to subscribe, see the web site [www.worldscientific.com](http://www.worldscientific.com).

## Announcements

### ATC Seeks Subcontractors for Seismic Grading Project

The Applied Technology Council (ATC) is seeking experienced subcontractors to assist in the evaluation of preliminary seismic grading procedures for single-family wood-frame dwellings (ATC-50 Project). This effort is part of a multi-year study in which seismic rating procedures and rehabilitation guidelines for wood-frame dwellings will be developed and implemented within the City of Los Angeles. To date, several drafts of the seismic grading form have been developed and some preliminary tests have been conducted. However, before these forms can be delivered to the City of Los Angeles, a comprehensive testing period must be conducted. The current seismic rating form consists of 38 questions contained on four pages. There are seven major sections: Foundation, Superstructure/Framing/Configuration, Nonstructural and Miscellaneous Elements, Local Site Conditions, Condition of Structural Elements, Regional Site Location and Summary.

ATC's current plan is to award two subcontracts for these pilot test evaluations. Each subcontractor will be expected to conduct 200 evaluations in the City of Los Angeles over a five-month period. A list of candidate dwellings will be provided to the two subcontractors. The subcontractors will be expected to conduct these evaluations in three phases. The first phase, which will take place in the first month, will allow the subcontractor to conduct a limited number of evaluations in order to: (1) become familiar with the forms, (2) identify any major implementation issues, and (3) interface with the developer of the seismic rating forms. The second phase, which will be conducted in months two through four, will focus on the completion of the remaining evaluations. The third phase, which will take place in the final month, will focus on the completion of a summary report. This report will serve as the basis for making any final changes to the rating form.

Qualification packages are due at ATC no later than 4:00 p.m., May 12, 2000. For more information regarding the requirements and judgment criteria of this RFQ, see the full text of this announcement at the ATC web site [www.atccouncil.org](http://www.atccouncil.org).

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## Announcements

### Structural Welding Seminars

"Structural Welding: Design and Specification," a seminar conducted by the Steel Structures Technology Center will be offered in several cities in the eastern United States this spring and summer.

The seven-hour course will incorporate the new AWS D1.1-2000 *Structural Welding Code—Steel*, the AISC LRFD *Specification*, and new FEMA guidelines for structural welding in seismic regions. The

seminar is geared for structural and civil engineers and those involved in the fabrication and erection of steel-framed structures. The fee for the seminar is \$185 per person.

For more information, contact the Steel Structures Technology Center, 42400 W. Nine Mile Rd., Novi, Michigan 48375; phone: 248/344-2910; fax: 248/244-2911; e-mail: [info@steelstructures.com](mailto:info@steelstructures.com); web site: [www.steelstructures.com](http://www.steelstructures.com).

## Call for Abstracts

### IABSE Conference on Cable-Supported Bridges

The International Association for Bridge and Structural Engineering (IABSE) is holding a conference on Cable-Supported Bridges: Challenging Technical Limits in Seoul, South Korea on June 12-14, 2001. The completion of two major cable-supported bridges in Korea, the Yong-jong and Seohae Grand bridges, will coincide with the conference.

The objective of the conference is to provide a forum for bridge engineers and professionals from around the world to exchange and share valuable ideas and experiences related to the design, construction, and maintenance of cable-supported bridges. The conference will cover medium to long span suspension and cable-stayed bridges with conventional and innovative conceptions.

A broad spectrum of topics, including cables, cable systems, girder systems, pylons, anchorage, connection, erection, operation, and maintenance, will be discussed during the conference. Practicing structural engineers and other professionals from government, research institutes, universities, construction companies, and consulting firms will have excellent opportunities to capture not only state-of-the-art technologies but also future trends.

Individuals wishing to present a paper in the Working Sessions on Conceptual Design, Analysis and Design, Construction, Maintenance, or Operation, should submit an abstract by June 30, 2000 to the Conference Secretariat in Seoul by e-mail to [seoul2001@iabse-kr.org](mailto:seoul2001@iabse-kr.org). More information is available from the Conference Secretariat in Seoul or from IABSE at [secretariat@iabse.ethz.ch](mailto:secretariat@iabse.ethz.ch).

## 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**.

### 2000

#### MAY

5-6. 5th Conference on Tall Buildings in Seismic Regions, Los Angeles, CA. Info: Marshall Lew, [mlew@lawco.com](mailto:mlew@lawco.com) (11/99)

8-10. Structures Congress 2000, Philadelphia, PA. Info: [www.asce.org/conferences/structures2000](http://www.asce.org/conferences/structures2000) (9/99)

15-17. ASDSO Western Region Annual Conference, Seattle, WA. Info: [djsd461@ecy.wa.gov](mailto:djsd461@ecy.wa.gov) (2/00)

21-24. Engineering Mechanics 2000 Conference, Austin, TX. Info: [www.ce.utexas.edu/em2000](http://www.ce.utexas.edu/em2000) (9/99)

21-24. ASCE Forensics 2000 Conference, San Juan, Puerto Rico. Info: [www.asce.org/conferences/forensics](http://www.asce.org/conferences/forensics) (12/99)

28-June 2. Composite Construction in Steel and Concrete IV, Banff, Alberta, Canada. Info: [www.uefoundation.org](http://www.uefoundation.org) (7/99)

31-June 3. EERI Annual Meeting, St. Louis, MO. Info: [www.eeri.org](http://www.eeri.org). See page 1. (2/99, 3/00, 4/00, 5/00)

#### JUNE

5-6. Structural Damage ID Short Course, Madrid, Spain. Info: [www.la-dynamics.com](http://www.la-dynamics.com) (2/00)

18-21. International Conference on Monte Carlo Simulation, Monte Carlo, Monaco. Info: [www.uibk.ac.at/c/c8/c810/conf/mcs\\_2000.html](http://www.uibk.ac.at/c/c8/c810/conf/mcs_2000.html) (10/99)

19-22. Conference on Vibration Theory and Applications, Xi'an, China. Info: fax +86-29-3237910 (4/99)

#### JULY

24-26. ASCE Probabilistic Mechan-

ics and Structural Reliability Conference, Notre Dame, IN. Info: [www.nd.edu/~pmc2000](http://www.nd.edu/~pmc2000) (6/99)

24-26. Structural Stability Research Council Annual Meeting, Memphis, TN. Info: [www.ce.ufl.edu/~inssrc/ssrc.html](http://www.ce.ufl.edu/~inssrc/ssrc.html) (8/99)

31-August 4. IAG Symposium, Banff, Alberta, Canada. Info: [www.acs.ucalgary.ca/~sideris/GGG2000/GGG2000.html](http://www.acs.ucalgary.ca/~sideris/GGG2000/GGG2000.html) (4/00)

#### AUGUST

16-19. SEAOC 2000 Annual Meeting, Vancouver, British Columbia. Info: [www.seaonc.org/2000convention.html](http://www.seaonc.org/2000convention.html) (2/00)

17-21. 5th Int. Symp. on Environmental Geotechnology and Global Sustainable Development, Minas Gerais, Brazil. Info: [www.5iseggsd.eng.ufmg.br](http://www.5iseggsd.eng.ufmg.br) (2/99)

21-24. STESSA 2000 Conference, Montreal, Canada. Info: [tremblay@struc.polymtl.ca](mailto:tremblay@struc.polymtl.ca) (3/99)

#### SEPTEMBER

5-8. Postearthquake Highway Response and Recovery Seminar, St. Louis, MO. See page 7. (5/00)

17-22. WSSPC Natural Hazards Conference, Seattle, WA. Info: [www.wsspc.org](http://www.wsspc.org) (2/00)

18-20. Symposium on Automation and Robotics in Construction, Taipei, Taiwan. See page 5. (5/00)

18-21. 16th Congress of the International Association of Bridge and Structural Engineering, Lucerne, Switzerland. Info: [www.iabse.ethz.ch](http://www.iabse.ethz.ch) (1/99)

21-24. 43rd Association of Engineering Geologists Annual Meeting, San Jose, CA. Info: [www.aegweb.org](http://www.aegweb.org) (3/00)

25-26. 3rd International Conference on Ground Improvement Techniques, Singapore. Info: fax +65-235-3530, [cipremie@signet.com.sg](mailto:cipremie@signet.com.sg) (7/99)

**25-October 6. Workshop on 3-D Modeling of Seismic Waves, Trieste,**

**Italy. See page 7. (5/00)**

#### OCTOBER

5-7. Deep Foundations Institute International Conference and Exposition, New York, NY. Info: [www.dfi.org](http://www.dfi.org) (11/99)

11-13. Risk 2000 Conference, Bologna, Italy. Info: [www.wessex.ac.uk](http://www.wessex.ac.uk) (1/00)

#### NOVEMBER

7. Kobori Symposium, Kyoto, Japan. Info: [suzuki@zeisei.dpri.kyoto-u.ac.jp](mailto:suzuki@zeisei.dpri.kyoto-u.ac.jp) or [wdiwan@caltech.edu](mailto:wdiwan@caltech.edu) (3/00)

7-9. 5th International Conference on Corporate Earthquake Programs, San Jose, CA. Info: Steven Vukazich, [vukazich@email.sjsu.edu](mailto:vukazich@email.sjsu.edu) (11/99)

12-15. 6th International Conf. on Seismic Zonation, Palm Springs, CA. Info: EERI office, [eeri@eeri.org](mailto:eeri@eeri.org), [www.eeri.org](http://www.eeri.org) (6/98, 12/99)

#### DECEMBER

13-15. ASD 2000, Hong Kong. Info: [ceylxu@polyu.edu.hk](mailto:ceylxu@polyu.edu.hk) (3/00)

### 2001

#### JANUARY

7-12. Conference on Computer Methods and Advances in Geomechanics, Tucson, AZ. Info: [intermix.engr.arizona.edu/~epd/#IACMAG](mailto:intermix.engr.arizona.edu/~epd/#IACMAG) (11/99)

#### FEBRUARY

7-10. 2001 EERI Annual Meeting, Monterey, CA. Info: [www.eeri.org](http://www.eeri.org) (2/00)

#### MARCH

19-22. International Symposium on Deformation Measurements, Anaheim, CA. Info: [www.pasadena.wr.usgs.gov/scign/fig/](http://www.pasadena.wr.usgs.gov/scign/fig/) (3/00)

#### JUNE

12-14. IABSE Conference on Cable-Supported Bridges, Seoul, South Korea. See page 10. (5/00)

### 2002

#### JULY

21-25. 7th National Conference on Earthquake Engineering, Boston, MA. Info: [www.eeri.org](http://www.eeri.org) (9/99)

## Publications

### 1998 and 1999 Professional Fellowship Reports Available

Suzanne D. Nakaki and Jeffrey R. Keaton, the 1998 and 1999 NEHRP Professional Fellows in Earthquake Hazard Reduction respectively, have completed their reports on their six months of research. The EERI/NEHRP Professional Fellowships are funded by FEMA, and the reports of the research are free. To obtain copies, contact the EERI office.

Nakaki's report, *Developing Design Guidelines for Precast Concrete Diaphragms*, focuses on developing design guidelines for precast concrete diaphragms from a system performance perspective. The 1994 Northridge earthquake raised concerns within the engineering community about the performance of precast concrete diaphragms. Previously, the focus of their design had been on connection be-

havior. However, academic research pointed toward the evaluation of deformation behavior as being more critical than force transfer. Nakaki has developed broad methods to ensure that the research results can be easily incorporated into design guidelines and building codes. Because of the likelihood that this report will become code language in the near future, Nakaki took extra time to ensure correctness and completeness. Her research was conducted with John Stanton of the University of Washington, Seattle.

Keaton's report, *Synthetic Seismograms for Normal-Faulting Earthquakes Using the Composite Source Model*, demonstrates that the composite source model can be used to produce acceleration-, ve-

locity-, and displacement-time history records for normal-faulting earthquakes for sites located on the footwall, the hanging wall, and vertically above the projection of normal faults. Acceleration-time histories of normal-faulting earthquakes are compared to synthetic seismograms produced by the composite source model as both time-history records and acceleration-response spectra. Input parameters and computing requirements for the model are described. Keaton believes that the composite source model provides a useful alternative to scaling earthquake recordings for engineering design applications. The research was conducted with John Anderson and Yuehua Zeng of the University of Nevada, Reno, Seismological Laboratory.



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