

**EARTHQUAKE ENGINEERING  
RESEARCH INSTITUTE**

## **NEWSLETTER**

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### **Publications**

## **Northridge EQ Proceedings Available**

The California Universities for Research in Earthquake Engineering (CUREe) still has some copies of *Proceedings of the NEHRP Conference and Workshop on Research on the Northridge, California Earthquake of January 17, 1994* available for sale. The proceedings contain over 160 papers, including 19 commissioned overview papers summarizing research and implementation aspects on various topics in earth science, engineering, social sciences, and emergency management. The cost of the proceedings is \$195. For more information, contact CUREe, 1301 S. 46th Street, Richmond, CA 94804; phone: 510/231-9557; fax: 510/231-5664; web site: [www.curee.org](http://www.curee.org).

### **News of the Institute**

## **EERI Names Pinkham Honorary Member**

The EERI Board of Directors voted to name Clarkson W. Pinkham as an Honorary Member. Honorary membership is awarded to recognize members who have made sustained and outstanding contributions either in the field of earthquake engineering or to EERI and the pursuit of its objectives.

Pinkham is currently President of S. B. Barnes Associates of Los Angeles, an engineering firm that has worked on structures of all kinds for over 70 years. The firm has also served as consultant to the legal and construction industries on code issues. In his participation in many national code design groups, Pinkham has significantly influenced earthquake engineering practice. These groups include the committee that helped develop the Load and Resistance Factor Design procedure for the American Iron and Steel Institute and the American Institute of Steel Construction. He has also served on the Structural Specifications Liaison Committee, which coordinated design ap-

proaches for various construction materials.

Pinkham has been an EERI member for 34 years and is a past member of the Board of Directors (1994-1997). He is a past president of both the Structural Engineers Association of Southern California (SEAOSC) and the SEA of California, and an honorary member of SEAOSC. He received the S.B. Barnes Award for Research from SEAOSC in 1985 and 1990. He is a past director of both the American Concrete Institute (ACI) and the Masonry Society, and received ACI's Henry L. Kennedy Award.

### **News of the Institute**

## **Honors Committee Seeks Member Input**

Whom do you think EERI should recognize and acclaim at the 2001 Annual Meeting? The EERI Honors Committee wishes to reflect the voice of the membership in nominations that it forwards to the Board of Directors for approval. The committee would appreciate receiving nominations from members for the following awards: 1. **The George W. Housner Medal** is awarded to recognize members of the Institute and others who have made extraordinary and lasting contributions to public earthquake safety through the development and application of earthquake hazard reduction practices and policies. 2. **Honorary membership** is awarded to recognize members who have made sustained and outstanding contributions to the field of earthquake engineering or to the Institute and the pursuit of its objectives. 3. **The Outstanding Paper** from *Spectra* is also recognized at the Annual Meeting.

Send your nominee suggestion, with a brief citation giving the reasons your nominee deserves to be honored, to the Honors Committee at the EERI office by August 31, 2000. Past recipients of the Housner Medal and Honorary Members are listed in the EERI Roster.



## National Earthquake Hazards Reduction Program

### News of the Profession

## Advanced National Seismic System Will Benefit Earthquake Engineering

*Note: The following article was written by Arthur Frankel, Harley Benz, and John Filson of the U.S. Geological Survey at the invitation of the EERI Board of Directors.*

A major national initiative in new seismic instrumentation is underway that will serve the needs of earthquake engineers and improve public safety.

Traditionally, there has been a separation between strong-motion seismology and regional-network seismology, each with its own priorities, instrumentation, and data protocols. A new generation of digital seismic recorders and sensors makes it possible to record motions over wide ranges of amplitude and frequency, removing the need for separate and specialized communities based on instrumentation.

In a recently submitted report to Congress, U.S. Geological Survey (USGS) Circular 1188 advocates development of an Advanced National Seismic System (ANSS) that calls for the installation of 7,000 new digital seismographs that addresses the needs of the engineering and academic seismology communities. Under the ANSS plan, 6,000 seismic stations will be lo-

cated in urban areas with significant seismic risk (see figure 1). About 3,000 of these instruments would be free-field or reference sites and the other 3,000 instruments would be installed in buildings and other structures of interest. The remaining 1,000 seismographs would be used for regional earthquake monitoring. Installation of 7,000 new digital seismographs that can record motions up to 2g would represent an order of magnitude increase in the number of instruments in the United States capable of recording large, damaging earthquakes on scale.

One of the principal goals of the ANSS is to provide the information needed to assess the performance of buildings and other structures as a function of ground shaking from large earthquakes. By having relatively dense arrays of instruments in urban areas of higher seismic risk, the ANSS will vastly expand the data available for relating the performance of a large number of diverse structures to strong ground motions. In turn, the extensive instrumentation of structures in the ANSS will allow engineers to study in detail the response of these structures to strong shaking, providing data that are essential for the development of performance-based seismic engineering. Thus, the new information from the ANSS will help engineers to improve the design of structures that will perform well during strong earthquakes, and to develop the next generation of seismic provisions of building codes using performance-based design.

The extensive database of accelerograms that will be recorded by the ANSS during large earthquakes will vastly increase the number of time histories available for the design of structures. The large number of accelerograms recorded by the ANSS for a specific large earthquake will be especially useful for quantifying the variability of ground motion for a given magnitude, distance, and site condition. Knowledge of this

variability is important for predicting the response of a structure at a specified probability level. A key priority of the ANSS is to make it easy for engineers to access the data in forms that they can use.

The strong-motion recordings of the ANSS will also improve our ability to make accurate synthetic accelerograms for anticipated large earthquakes. The increased density of instruments recording a large earthquake in the near field will allow seismologists to improve their understanding and prediction of critical aspects of earthquake rupture, such as directivity, spatial distribution of stress release along faults, and the dynamics of rupture. Accurate synthetic seismograms are important tools for engineers in the design of major structures, where ground-motion time histories are sometimes required for specific rupture scenarios and site conditions.

The prediction of nonlinear site response during strong input motions is one of the key issues in geotechnical engineering and will be addressed in the ANSS deployment. Data from these new instruments during large earthquakes will enable a detailed mapping of site response for strong shaking, leading to an improved quantification of nonlinear site response. The ANSS will likely include some downhole seismometers so that site response can be directly determined for various levels of shaking.

Most of the instruments deployed in the ANSS will transmit their data in real time to regional data collection centers. The ANSS will provide real-time assessments of the severity and distribution of earthquake shaking, using both the free-field and structural instrumentation, as well as broadcasts of earthquake parameters. Shake maps will be generated and broadcast immediately after a significant earthquake, showing contours of the amount of ground shaking, including peak

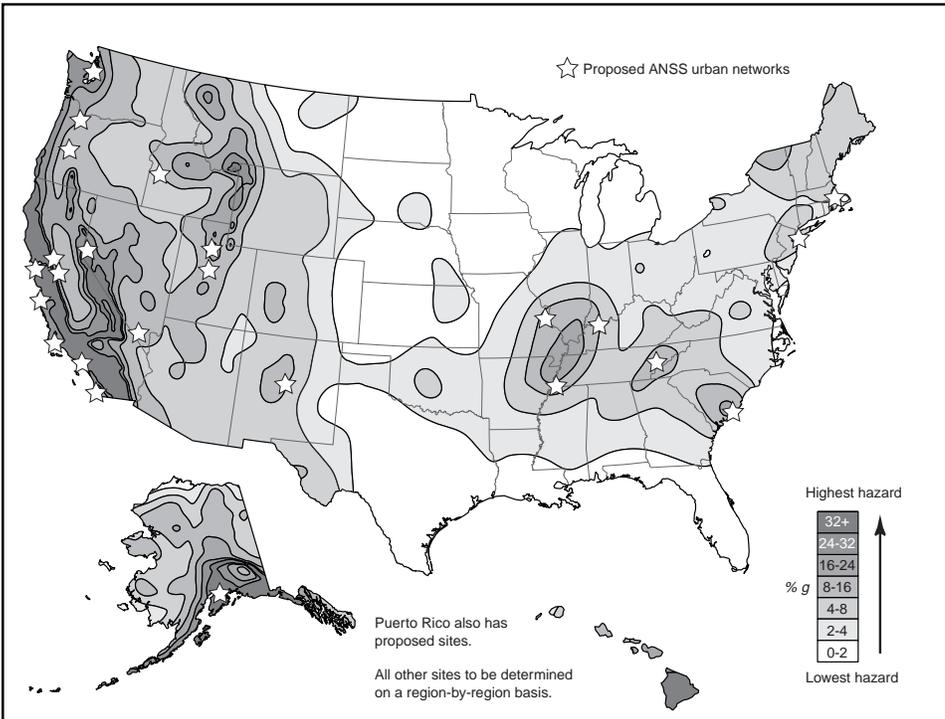


Figure 1. Map of earthquake ground-shaking hazard in the United States with proposed ANSS urban networks (stars). The hazard map is a simplified version of the USGS national seismic hazard map showing peak horizontal ground accelerations with a 10% chance of being exceeded in 50 years, for a firm-rock site condition.

parameters, instrumental intensities, and spectral response values. This time-critical information will be invaluable for emergency response and rapid evaluation of damage. In the longer term, the ground-motion data from the ANSS will improve the precision of loss estimation procedures in programs such as FEMA's HAZUS.

We don't have to wait for large earthquakes to make progress in ground-motion estimation useful for engineering applications. Since the ANSS stations will also record weak motions in urban areas, these recordings will be used to study the effects of local geology (and geologic structures, such as sedimentary basins) on ground motions. Focusing and diffraction of seismic waves by sedimentary basins have been shown to cause concentrations of damage during the 1994 Northridge and 1995 Kobe earthquakes. By recording and modeling weak motions from local and regional earthquakes, we will

improve the prediction of basin effects that will occur during large shocks. Several studies have demonstrated that weak ground motions from local and regional earthquakes can be effectively recorded from force-balance accelerometers in high-noise urban environments. Issuance of shake maps and other information by the ANSS for small local and larger regional events will ensure the high visibility of this effort with the general public and encourage mitigation actions before damaging events occur.

In broader terms, the ANSS will improve deterministic and probabilistic assessments of seismic hazard. Seismograms from the increased number of high-quality stations throughout the nation will be used to update ground-motion attenuation relations. These are essential components to hazard assessments, such as the national seismic hazard maps, which form the probabilistic basis of the ground-motion requirements in the

national model building code. The ANSS data will also be invaluable for revising the acceleration-dependent factors of site amplification in the building code as a function of shallow shear-wave velocity.

Data from the ANSS will also provide an improved catalog of earthquakes in the United States, which is a fundamental input to any hazard estimate.

The framework for an Advanced National Seismic System began in the 1980s, as both the seismic engineering community and regional seismic networks recognized the need to modernize and unify seismic monitoring in the United States in order to provide improved data for engineering, public safety, and research. The concept of the ANSS was derived from elements of earlier national-level reports on seismic monitoring commissioned by the National Research Council, the National Science Foundation, and the USGS. In addition, the ANSS is gaining valuable insight and experience from the TriNet program in southern California. The ANSS will build on the experience of the California Strong-Motion Instrumentation Program (CSMIP) and the USGS National Strong-Motion Program (NSMP). The Consortium of Organizations for Strong-Motion Observation Systems (COSMOS) will have an important advisory role in implementing the ANSS.

Initial funding of \$1.6 million for the ANSS was appropriated in the fiscal year 2000 federal budget. This money targets installation of real-time urban strong-motion instruments in the San Francisco Bay, Seattle, and Salt Lake City areas, with the majority of stations being installed in populated areas near buildings and other structures. In fiscal year 2001, an additional \$2.6 million is in the President's budget for ANSS. These second-year funds would go towards deployment of new instrumentation in a broader set of urban centers at

risk from damaging earthquakes. This funding level is a small fraction of the estimated cost of \$170 million for the purchase and deployment of a 7,000-station ANSS and the annual operating cost of \$47 million. Recognizing the pressing need for the ANSS and its benefits to the nation, the House of Representatives has authorized (not appropriated) \$38 million per year for the ANSS for fiscal years 2000-2004. Other sources of funding are also being pursued through state governments and private industry.

An essential aspect of the ANSS is a management structure in which the earthquake engineering community helps to determine the priorities of the deployment and has a major role in choosing the locations of instruments. An interim National Steering Committee that oversees implementation of the ANSS has been formed and is charged with establishing a permanent committee that will reflect the needs of the earthquake engineering community.

Technical subcommittees are being formed in which earthquake engineers will help to develop the standards for instrumentation, station installations, data formats, and data access. Specific concerns of engineers will be sought and taken into account in each region of ANSS development.

The USGS looks forward to working with the earthquake engineering community to ensure that the ANSS addresses the spectrum of earthquake issues that are critical to public safety.

For more information on the ANSS, see the website at <http://pasadena.wr.usgs.gov/eqhaz/ANSS.html>.

Acknowledgment: We thank Paul Somerville and E.V. Leyendecker for their useful suggestions that improved this article.

## Call for Abstracts

### U.S.-Japan Workshop on Structural Design and Construction Practices

The Applied Technology Council (ATC) and the Japan Structural Consultants Association (JSCA) announce the *Ninth U.S.-Japan Workshop on Improvement of Structural Design and Construction Practices*, to be held August 21-23, 2000, in Victoria, British Columbia, Canada. These workshops provide unique opportunities for leading engineers from the two countries to discuss state-of-the-art structural engineering issues in both formal and informal surroundings. The 9<sup>th</sup> U.S.-Japan Workshop will be held following the August 16-20 Annual Convention of the Structural Engineers Association of California in Vancouver, British Columbia. The program for the 9<sup>th</sup> Workshop includes technical presentations by structural and earthquake engineering design practitioners and researchers from Japan, Canada, and the United States, as well as working group discussions and several social functions. The workshop program is expected to include papers on the following topics: performance-based engineering (including case studies pertaining to new and existing construction); near-field earthquake ground motion; innovative concepts and techniques for improving seismic performance; current design challenges and opportunities; and issues in professional design practice.

Practitioners and researchers interested in participating in the workshop and presenting a paper on one of the above topics should submit a one-page abstract no later than June 16, 2000, to the Applied Technology Council, 555 Twin Dolphin Drive, Suite 550, Redwood City, California 94065 (fax: 650/593-2320; e-mail: [atc@atcouncil.org](mailto:atc@atcouncil.org)). Selected authors will be notified by July 1, 2000. Final papers (12 pages in length, maximum) will be due August 1, 2000. Persons interested in participating in the workshop (presenting a paper or not) may do so by completing and submitting the Workshop Registration Form, which can be obtained from ATC (phone: 650/595-1542), or downloaded from ATC's web site ([www.atcouncil.org](http://www.atcouncil.org)). All participants will be required to pay their own travel and hotel expenses and the workshop registration fee (approximately \$200), which includes workshop luncheons, break refreshments, and workshop preprints.

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## News of the Profession

### Prakash Award Deadline Extended to June 30

The Shamsher Prakash Foundation has extended the deadline for submitting nominations for the 2000 Shamsher Prakash Research Award to June 30. The award is given to a young (less than 40 years old) engineer, scientist, or researcher. Candidates should be specialists in geotechnical engineering or geotechnical earthquake engineering, have made significant independent contributions to the field, and show promise of future excellence. The

award includes a cash prize of \$1,001. All nominations will be reviewed by a judging committee of international experts, and the award will be announced by September 30, 2000.

Nomination packages can be obtained from Sally Prakash, Honorary Secretary, Shamsher Prakash Foundation, 1111 Duane Ave., Rolla, MO 65401; fax: 573/364-5572; e-mail: [sallyp@umr.edu](mailto:sallyp@umr.edu).

## News of the Membership

### EERI Member Bruce Clark Appointed to CSSC

EERI member Bruce Clark has been appointed to the California Seismic Safety Commission (CSSC). He was one of the candidates formally submitted by EERI. Clark replaces James Slosson, an EERI member since 1973, whose term expired.

Clark has been President and CEO of Leighton and Associates, Inc., a geotechnical consulting firm, since 1988. He was its vice president from 1977 to 1985. From 1968 to 1977, he was an assistant professor and an associate professor at the University of Michigan. Clark has more than 30 years of experience as a geologist.

He is a member of the American Geophysical Union and the Seismological Society of America. He earned a bachelor of science degree from Yale University and a doctorate from Stanford University.

In addition to appointing Clark,



Governor Gray Davis also appointed Stan Moy to the CSSC. Moy replaces Gary McGavin, an EERI member since 1977, whose term expired.

Moy is an architect with Finger and Moy Architects of San Francisco, a position he has held since 1981. He also has been serving as a member of the State Building Authority for San Francisco since 1993.

nication and electrical systems have made the emergency response effort very difficult. Initial reports from officials estimate heavy damage to 250 government offices, 64 churches, 92 mosques, 237 school buildings, 15 health centers, and approximately 11,000 houses.

*This report was submitted by Gregorius Sandjaja S. of Tarumanagara University, Jakarta, and Teddy Boen of Teddy Boen & Associates, Jakarta, Indonesia.*

## News of the Institute

### Annual Meeting Travel Grant Recipients

With support from FEMA, several travel grants were 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 St. Louis. This financial support was contingent upon participation in the poster sessions, either through the applicant's own research project, or as a representative of a student chapter depicting the chapter's activities. The travel grant recipients are:

Mike Allen, Notre Dame\*  
Rich Christensen, Notre Dame\*  
Kenneth J. Elwood, UC Berkeley  
Kenny Farrow, Notre Dame\*  
Jason Hart, Texas A&M  
Blake Hoskisson, Notre Dame\*  
Mohamed Mahgoub, Carleton University  
A. Grant Margarian, Univ. of Michigan  
Nason McCullough, Oregon State Univ.  
Brian Morgen, Notre Dame\*  
Tom MacDougall, Brigham Young Univ.  
Scott M. Schlecter, Oregon State Univ.  
Ani Natali Sigaher, SUNY Buffalo  
Kathiravetpillai Sivathanan, UC Davis

\*The five Notre Dame students are sharing one grant.

## Announcements

### AEES Conference 2000

The Annual Conference of the Australian Earthquake Engineering Society will be held in Hobart, Tasmania, on November 15-16, 2000, with a field trip to the Lake Edgar fault scarp and Gordon Dam on November 17. The conference theme is "Dams, Fault Scarps and Earthquakes."

For more information contact:  
Barbara Butler, PO Box 829,  
Parkville, Victoria 3052, Australia;  
phone: +03-8344-6712; fax:  
+03-8344-4616; e-mail: [b.butler@civag.unimelb.edu.au](mailto:b.butler@civag.unimelb.edu.au); web site:  
[www.aees.org.au/News/2000\\_AGM.html](http://www.aees.org.au/News/2000_AGM.html).

## News of the Profession

### M 6.5 Earthquake Strikes Indonesia

On May 4, 2000, a magnitude 6.5 earthquake hit the Central Sulawesi Province in Indonesia. The hardest hit areas were the Banggai Islands and Luwuk Banggai in mainland Central Sulawesi. In addition to damage caused by strong shaking, a tsunami measuring over six meters in height hit the islands. Over 200 aftershocks were recorded in the five days following the main shock. Initial estimates place the death toll at 46, with over 30,000 people left homeless, and damage totaling more than US\$33.5 million. The majority of the damage is in remote areas, and the destruction of 45 bridges, 148 km of roads, many ports, and the commu-

## News of the Membership

### ***Earthquake Spectra* Outstanding Paper for 1998 Awarded in St. Louis**

"Earthquakes, Records, and Nonlinear Responses," by Niles Shome, C. Allin Cornell, Paolo Bazzurro, and J. Edward Carballo, was recognized as the Outstanding Paper in Volume 14 of *Earthquake Spectra* during an awards ceremony on June 2 during EERI's Annual Meeting in St. Louis. The paper was published in the August 1998 issue.

The reviewers were in agreement that these authors made a significant contribution to the literature of the earthquake field and should be commended for a job well done. The commentary stated in part, "The paper presents very useful information for engineers performing probabilistic seismic demand analyses of structures ... I am sure the paper will spark quite useful debate."



*Outstanding paper authors Niles Shome, Paolo Bazzurro, C. Allin Cornell, and J. Edward Carballo*

## News of the Profession

### **Job Opportunities**

**Geomatrix Consultants**, Oakland, California. Staff Geologist in the Geotechnical Engineering and Earth Sciences Group. An M.S. or Ph.D. in geology is required. Initial duties include field mapping and subsurface exploration, photogeologic interpretation, compiling geologic data, and report writing for geologic hazards investigations, such as landslide and fault rupture hazard assessments. Contact: Geomatrix Consultants, 2101 Webster Street, 12th Floor, Oakland, CA 94612, Attn: Human Resources; fax 510/663-6361. Refer to Job #00-GEES03.

**University of California, Berkeley.** Principal Development Engineer with PEER Center. Under direction of the PEER Assistant Director, manage research activities of the Program of Applied Earthquake Engineering on Lifeline Systems. Lead development of the research program, including establishing goals, drafting requests for proposals, reviewing proposals, and participating in selection of researchers. Monitor financial, reporting, and technical progress of individual projects. Deadline for applications is June 15, 2000. Contact: UC Berkeley Human Resources at [hrweb.berkeley.edu/hrjobs.htm](http://hrweb.berkeley.edu/hrjobs.htm) or 510/642-1011. Refer to Job #05-106-10/MSP.

## News of the Institute

### **Egan Visits Oregon State University Student Chapter**

The Oregon State University EERI Student Chapter hosted John Egan from Geomatrix Consultants on February 10 as part of the Visiting Professionals Program. Egan gave three presentations throughout the day. The first, "Seismic Ground Deformations," was oriented towards geotechnical engineering graduate students and local practitioners. The second, "7th Street Marine Terminal, Port of Oakland: Damage from the 1989 Loma Prieta Earthquake, Remediation Design and Construction," was a more general engineering talk. The final presentation, "A Decade of Earthquakes: Damage and Lessons Learned," was the most general talk and was attended by approximately 100 people. The EERI Visiting Professionals Program is one of the activities supported by the EERI Endowment Fund.

## News of the Profession

### **Earthquake Engineering Information Center in India**

Two years ago, EERI Member Sudhir Jain and his colleagues decided that India should have an Earthquake Engineering Information Center located at the Indian Institute of Technology in Kanpur. The center was established and is beginning to build up its collection of books and journals. EERI members with an interest in earthquake engineering in India may send donations of books and funds to: Professor Sudhir Jain, Civil Engineering Department, India Institute of Technology, Kanpur, India 208016.

**PLEASE POST IMMEDIATELY**



## **Earthquake Hazards Reduction Fellowship Announced**

Under a cooperative agreement established with FEMA, the Earthquake Engineering Research Institute is pleased to offer the **2001 Professional Fellowship** to provide an opportunity for a practicing professional to gain greater skills and broader expertise in earthquake hazards reduction, either by enhancing knowledge in the applicant's own field, or by broadening the applicant's knowledge in a related but unfamiliar discipline.

### **Who Should Apply?**

This unique fellowship is aimed at the career professional and is designed to bring together an experienced practitioner with professionals conducting significant research, providing an opportunity to enrich the applicant's knowledge and skills and broaden the research base with challenges faced in practice. The Professional Fellowship is *not* intended to fund work towards a degree.

### **The Award**

The fellowship provides a stipend of \$30,000, commencing in January 2001, to cover tuition, fees, relocation costs, and living expenses for a six-month period.

### **Criteria**

Applicants must provide a detailed work plan for a research project that would be carried out to completion in the six-month period. The Fellow will be expected to produce a written report upon completion of the project. Each application must be accompanied by a professional resume and a letter of nomination from the faculty host at the cooperating educational institution. The faculty host should also indicate the institution's ability to provide research facilities, including library, work space, telephone, and computer access. Applicants must hold U.S. citizenship or permanent resident status.

### **To Apply**

Candidates may obtain an application form from the Earthquake Engineering Research Institute, 499 14th Street, Suite 320, Oakland, California 94612-1934, tel: (510) 451-0905, fax: (510) 451-5411, e-mail: [eeri@eeri.org](mailto:eeri@eeri.org), or from EERI's web site at [www.eeri.org](http://www.eeri.org).

**Deadline for receipt of all application materials at EERI is September 4, 2000.  
Announcement of the award will be made on October 16, 2000.**

## News of the Membership

### Dan Frangopol is IABMAS President

Dan M. Frangopol, an EERI Member since 1988, co-founded the International Association for Bridge Maintenance and Safety (IABMAS) in 1999. At the October 1999 IABMAS inaugural meeting in Singapore, Frangopol accepted the position of President of IABMAS.

The mission of IABMAS is to become the premier international organization for the advancement of the state of the art in the fields of bridge maintenance, safety, and management. Frangopol also is the co-chair of the First International Conference on Bridge Maintenance, Safety, and Management (IABMAS '02) to be held in July 2002 in Barcelona, Spain. For more information about IABMAS see the web site [civil.colorado.edu/IABMAS](http://civil.colorado.edu/IABMAS).

Frangopol has been a Professor in the Civil, Environmental, and Architectural Engineering Department at the University of Colorado (CU) at Boulder since 1983. His research activities have included studies on reliability analysis and design of



buildings and bridges, bridge maintenance systems, and structural optimization. Frangopol has authored more than 100 technical refereed papers in various journals. A Fellow of ACI and ASCE, Frangopol is the editor of ten books and is on the editorial board of nine international journals. He is the recipient of several awards including the ASCE State of the Art of Civil Engineering Award, the FHWA Award of Appreciation, the SAE Distinguished Probabilistic Methods Educator Award, and the CU Boulder College of Engineering and Applied Science's Research Award.

## News of the Profession

### IASPEI Handbook of Earthquake and Engineering Seismology Being Compiled

The International Association of Seismology and Physics of the Earth's Interior (IASPEI) will celebrate its 100th anniversary in the year 2001. To mark this occasion, IASPEI is editing a centennial publication entitled "International Handbook of Earthquake and Engineering Seismology" with Paul C. Jennings, Hiroo Kanamori and William H. K. Lee as editors. The handbook will be published by Academic Press as a 1,500-page, 8-1/2"x 11" case-bound volume with a supplementary volume of about 10 CD-ROMs. It will contain extensive reviews of selected topics in earthquake engineering and engineering seismology, as well as summaries of the history and accomplishments of these disciplines. The handbook will also include a directory of information and history about earthquake engineering research institutions (government, university, and industrial), and professional societies in each member country of the International Association of Earthquake Engineering (IAEE). If you are interested in contributing material to the handbook, visit the following web site: [caldera.wr.usgs.gov/iaspei/iaspei.html](http://caldera.wr.usgs.gov/iaspei/iaspei.html). The deadline is June 15, 2000.

## Publications

### Earthquake-Resistant Engineering Structures II

Published as part of WIT Press's Advances in Earthquake Engineering Series, *Earthquake-Resistant Engineering Structures II* contains a selection of contributions presented at the Second International Conference on Earthquake-Resistant Engineering Structures (ERES 99), which was held at the University of Catania, Italy, in June 1999.

Attended by researchers from around the world, the conference provided a forum for the discussion of both basic and applied research in the field. The conference volume features state-of-the-art research together with specific case histories.

The 78 papers are divided into the following headings: Reinforced Concrete Structures; Bridges; Building Structures; Ground Motion and Site Effects; Seismic Design Criteria; Earthquake-Resistant Design; Historic Buildings and Monuments; Soil Structure Interaction; Seismic Isolation and Control; Soil Dynamics; Case Studies; and Retrofit.

The editors of the book are G. Oliveto, University of Catania, Italy, and C.A. Brebbia, Wessex Institute of Technology, UK.

The 848-page volume is available for \$395 from Computational Mechanics, Inc., 25 Bridge Street, Billerica, MA 01821 (phone: 978/667-5841; fax: 978/667-7582; e-mail: [marketing@compmech.com](mailto:marketing@compmech.com); web site: [www.compmech.com](http://www.compmech.com)).

A 20% discount is available to EERI members who place orders within one month of this announcement appearing in the *Newsletter*.

## News of the Membership

### International Insurance Society Honors Shah

The Honors Committee of the International Insurance Society has selected EERI Honorary Member Haresh C. Shah for the John S. Bickley Gold Medal for Excellence Award. This award is the highest award bestowed by the Society on any individual. The award is given to a person who has made a singularly creative or innovative contribution to insurance thought, practice, or education that has been adopted by the industry or society. In the words of Mr. Meyerholz, President and Chief Executive Officer of the International Insurance Society, "Haresh Shah is one of the most qualified candidates ever." The award will be given to Shah on July 10, 2000, during the formal awards dinner in Vancouver, British Columbia.

Shah is a Professor Emeritus of Civil and Environmental Engineering at Stanford University. He is well-



known for his work in developing financial and insurance risk management strategies for catastrophic events such as earthquakes and hurricanes. He is author or co-author of more than 250 reports and papers. Shah has also served as an advisor to several foreign governments and United Nations bodies dealing with natural disasters.

## Announcements

### IBHS 7th Annual Congress

The Institute for Business and Home Safety (IBHS) will be holding its 7th Annual Congress on Natural Hazard Loss Reduction September 13-15, 2000 in Newport, Rhode Island.

The meeting topics include: business preparedness and continuity; building codes; risk and probability; land use; innovative partnerships and real-world results; and livable solutions for home owners, business owners, and communities. For more information, contact Karen Gahagan at 617/292-2003 x224 or see the web site [www.ibhs.org](http://www.ibhs.org).

### Seminars on Design of Masonry Structures

The Masonry Society (TMS) and the American Concrete Institute (ACI) are giving two sets of seminars at various locations around the United States this summer.

The first seminar, "ACI/TMS Seminar on the New 1999 Structural Masonry Code," is one day and is designed to help attendees understand the changes in the 1999 *Masonry Code* and learn to design and specify masonry structures utilizing the new code. The second, "ACI/TMS Seminar on How to Design Masonry Structures," is 1-1/2 days and is designed for practicing engineers who want to learn to design masonry structures using the new *Masonry Designers' Guide*.

For more information about the seminars, see the web site [www.concreteseminars.com](http://www.concreteseminars.com) or contact Member Services, P.O. Box 9094, Farmington Hills, MI 48333-9094; phone: 248/848-3815; fax: 248/848-3801.

## Announcements

### Courses in Seismic Engineering and Geotechnology

The University of California at Berkeley University Extension is offering two short courses this summer. The first is Seismic Isolation Design, offered June 23-24 at UC Berkeley, and July 7-8 at UCLA. This course covers design procedures, code requirements, and the range of design solutions available to engineers. The design of isolators is also covered along with their testing and specifications. The course permits practicing structural engineers to use this valuable anti-seismic structural technology with confidence. The course instructors are J.M. Kelly of UC Berkeley and Farzad Naeim of John A. Martin and Associates, and the cost is \$595.

The second course is Evaluation and Mitigation of Seismic Hazards, to be offered July 26-28 at UC Berkeley. It presents an overview of recent advances in seismic geotechnics, with special emphasis on ground motion, site response, soil liquefaction, and seismic slope stability and deformation. Selection and use of strong-motion data are covered, as are seismic and dynamic soil properties. The course instructor is Raymond Seed of UC Berkeley, and the cost is \$595 for government employees and \$795 for others. For more information on these two courses, phone 510/643-9926, fax 510/643-8290, e-mail [env@unx.berkeley.edu](mailto:env@unx.berkeley.edu), or visit the web site [www.unex.berkeley.edu/](http://www.unex.berkeley.edu/).

## News of the Membership

### George Lee Receives ASCE's Newmark Medal

The American Society of Civil Engineers (ASCE) has chosen EERI member George C. Lee, Director of the Multidisciplinary Center for Earthquake Engineering Research (MCEER) and Professor of Engineering at the University of Buffalo (UB), to receive the prestigious Nathan M. Newmark Medal for 2000. The national medal is given to an ASCE member who, through contributions in structural mechanics, has helped substantially to strengthen the scientific base of structural engineering.

Lee is cited for his achievements in both research, where he has made major contributions to the study and practice of making steel buildings safer during earthquakes, and education, where he was an early player in the move to build a program, now highly acclaimed, in earthquake engineering at UB. Lee is being honored specifically for his work on plastic analysis of struc-



tures and his research and leadership in aseismic design of structural and mechanical systems.

A member of the UB faculty since 1961, Lee served as Dean of the UB School of Engineering and Applied Sciences from 1977-95, and as Senior University Advisor for Technology since 1995. Lee has published over 150 papers in structural engineering, mechanics and earthquake engineering, and has co-authored four books.

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## Announcements

### ICOSSAR 2001

The 8th International Conference on Structural Safety and Reliability (ICOSSAR 2001) will be held in Newport Beach, California, June 17-22, 2001. The conference is held every four years at sites around the world and is a major forum for the exchange of information and discussion of recent developments in, and innovative application of, concepts of structural safety and reliability. ICOSSAR 2001 will focus on advanced technologies, computational methods, smart materials, damage assessment, social science, urban planning, and commercial applications. Emerging concepts as well as state-of-the-art and novel applications of reliability principles in all types of structural systems and mechanical components will be included. ICOSSAR 2001 will emphasize the safety and performance requirements of critical engineering systems subjected to natural and man-made hazards, including life cycle analysis processes and costs.

The deadline for abstracts has passed, but prospective authors should contact the conference secretariat (e-mail: [Corotis@colorado.edu](mailto:Corotis@colorado.edu), phone: 303/492-7006, fax: 303/492-0353) to see if abstracts are still being accepted. For more information on ICOSSAR 2001 contact the conference secretariat or see the conference web page [www.colorado.edu/engineering/ICOSSAR](http://www.colorado.edu/engineering/ICOSSAR).

## Announcements

### San Francisco Bay Area HAZUS User Group Meetings

FEMA and the San Francisco Bay Area HAZUS User Group announce the following upcoming meetings to be held in Cupertino, California. The June 14, 2000 meeting will be a HAZUS User Applications Forum. The September 13-14, 2000 meeting will cover HAZUS Automap Capability, Standardized Emergency Management Protocol, and results from the San Francisco Bay Area HAZUS Earthquake Risk Assessment.

For more information contact: Jamie Caplan, Project Coordinator ([jcaplan@mediaone.net](mailto:jcaplan@mediaone.net)), James Buika, Project Lead ([james.buika@fema.gov](mailto:james.buika@fema.gov)), or see the web site [www.hazus.org](http://www.hazus.org).

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## News of the Profession

### Update on Earthquake Engineering and Soil Dynamics Conference

Approximately 400 abstracts from 33 countries have been accepted for the Fourth International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics to be held March 26-31, 2001, in San Diego, California. On March 29, a symposium in honor of Professor W.D. Liam Finn will be held in conjunction with the conference. Updates on the conference, including a list of papers, exhibits, registration, and a short course on Soil Dynamics, are available on the conference web site [www.umn.edu/~conted/conf8767.html](http://www.umn.edu/~conted/conf8767.html). The complete announcement about this conference appeared in the June 1999 issue of the *Newsletter*.

## 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

#### JUNE

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

**14. HAZUS Bay Area Users Group Meeting**, Cupertino, CA. See page 10. (6/00)

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)

**23-24. UCB Short Course on Seismic Isolation**, Berkeley, CA. See page 9. (6/00)

#### JULY

**23-24. UCB Short Course on Seismic Isolation**, Los Angeles, CA. See page 9. (6/00)

24-26. ASCE Probabilistic Mechanics 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)

**21-23. 9th U.S.-Japan Workshop on Structural Design and Construction Practices**, Vancouver, British Columbia. See page 4. (6/00)

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

#### SEPTEMBER

5-8. Post-Earthquake Highway Response and Recovery Seminar, St. Louis, MO. Info: [www.fhwa.dot/odiv/quake.htm](http://www.fhwa.dot/odiv/quake.htm) (5/00)

**13-14. HAZUS Bay Area Users Group Meeting**, Cupertino, CA. See page 10. (6/00)

**13-15. IBHS Annual Congress**, Newport, RI. See page 9. (6/00)

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. Info: [www.ce.ntu.edu.tw/~isarc17](http://www.ce.ntu.edu.tw/~isarc17) (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. Info: [www.ictp.trieste.it](http://www.ictp.trieste.it) (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)

**15-16. AEES Annual Conference**, Hobart, Tasmania. See page 5. (6/00)

#### 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](http://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

**17-22. ICOSAR 2001**, Newport Beach, CA. See page 10. (6/00)

### 2002

#### JULY

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

## News of the Profession

### Live Webcast of Shake Table Test

A live webcast of a demonstration earthquake test at the University of California, San Diego was aired April 28. The testing was part of the \$7 million CUREe-Caltech Wood-frame Project. The project, funded mainly by FEMA through a grant administered by the California Office of Emergency Services (OES), is aimed at developing reliable and economical ways to improve wood-frame building performance in earthquakes. UCSD structural engineers are performing earthquake tests on a two-story, 640 square-foot full-scale woodframe house. The house has been built on top of a shake table, and researchers plan to shake the house to simulate ground motions that occurred during the 1994 Northridge earthquake. Information from 300 sensors will be used to

create computer models to aid in evaluating new building technologies and design methods. To view the webcast, see the CUREe web site [www.curee.org](http://www.curee.org).

## News of the Institute

### New Ethics Case Posted on the Web

Under the direction of EERI member Peter Somers, the latest case study in the EERI Ethical Dilemmas web series has just been posted on the EERI web site. For each case in the series, readers are asked to vote on a possible course of action. These responses are then summarized and posted back on the site. Five case studies have been archived and are now available. The latest case study describes a dilemma faced by WeBildEm, a real estate development company located in the central U.S. This firm is com-

pleting a large renovation to turn a warehouse into a museum and public market. At the same time, an unrelated due diligence study of one of the company's other buildings, a six-story office building, has exposed serious seismic concerns in an assessment that was leaked to the press. Two independent engineering studies confirmed the assessment, but noted that in this part of the U.S., major earthquakes are infrequent. It is impossible for WeBildEm to finance an upgrade of the office building and complete the museum project. Both tenants and the design team for the museum project will pull out if the budget is squeezed further or the schedule is extended. There is no legal requirement for strengthening the office building, but many tenants and civic leaders have expressed concern. What should Mr. Finance, the CEO of WeBildEm, do? Log onto [www.eeri.org](http://www.eeri.org) and participate in the discussion.



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