



## EARTHQUAKE ENGINEERING RESEARCH INSTITUTE NEWSLETTER

Editor Thalia Anagnos  
Associate Editors Sarah Nathe  
Gerald Brady  
Editorial Assistant Eloise Gilland

Earthquake Engineering  
Research Institute  
499 14th Street, Suite 320  
Oakland, California 94612-1934  
Phone: 510/451-0905  
Fax: 510/451-5411  
e-mail: eeri@eeri.org  
Web site: <http://www.eeri.org>

ISSN 0270-8337

Reproduction with attribution is permitted.

### EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

PRESIDENT  
Craig D. Comartin

PAST-PRESIDENT  
Thomas D. O'Rourke

VICE PRESIDENT  
Sarah Nathe

SECRETARY-TREASURER  
Ronald L. Mayes

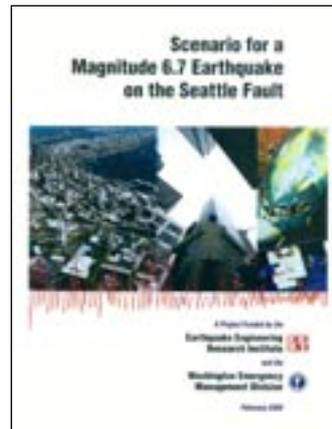
BOARD OF DIRECTORS  
John L. Aho  
Bruce R. Clark  
Richard K. Eisner  
Craig D. Comartin  
Polat Gülkan  
Ronald L. Mayes  
Farzad Naeim  
Sarah Nathe  
Thomas D. O'Rourke

EXECUTIVE DIRECTOR  
Susan K. Tubbesing

### News of the Institute

## Completion of the Seattle Fault Scenario

For almost three years, a dedicated group of engineers, academics, and seismologists from the Puget Sound region in the state of Washington researched and wrote *Scenario for a Magnitude 6.7 Earthquake on the Seattle Fault*, which describes the possibility of a shallow quake on a fault that runs under major regional transport networks and the cities of Seattle and Bellevue. The scenario projects the effects of the earthquake on various building types, lifelines, transportation, emergency response systems, and local economies. It was initially funded by grants from EERI's Endowment Fund and FEMA. On February 28, the completed scenario report was presented to the public at a well-attended, full-day conference in Bellevue.



The Washington State Emergency Management Department (EMD) took over ownership of the scenario and arranged a successful media campaign. One week before the scenario conference, the Seattle Times described the findings of the report in a group of articles in its Sunday edition. Local papers, television, and radio covered the scenario conference. Summaries of each section of the report were presented by EERI members, who put countless volunteer hours into researching the various effects of a Seattle fault earthquake. The report was enthusiastically received by an audience that included

*continued on page 4*

## Moehle Presents 2005 Distinguished Lecture on Performance-Based EQ Engineering

The first 2005 EERI Distinguished Lecture was presented on February 4 at EERI's Annual Meeting in Ixtapa, Mexico, by Jack Moehle, professor at UC Berkeley and director of the Pacific Earthquake Engineering Research Center (PEER). Its title is "Performance-Based Earthquake Engineering (PBEE): A Practical Approach to Dealing with Seismic Risk." As PEER director, Moehle leads a multidisciplinary research effort on PBEE.

Moehle defines PBEE as an approach to managing seismic risk whereby earthquake professionals quantify the risk in terms that are meaningful to decision makers, who can then make informed decisions that define a subsequent rational course of action for the professionals. To ensure that the objectives are meaningful and the means are fitting, interaction between engineer and decision maker is inherent in the successful application of PBEE. PBEE focuses on the achievement of specified results rather than adherence to particular technologies or prescribed means of achieving them. While this concept is not new, it is a focus of several ongoing implementation efforts that challenge the traditional way of thinking about performance and how to achieve it. The lecture examines aspects of PBEE such as seismic hazard analysis, structural and nonstructural modeling and analysis, damage assessment, and quantification of losses in ways that facilitate decision making. The lecture includes an example application that introduces a new

*continued on page 2*

## News of the Profession

### Civil and Mechanical Systems Division at NSF Reorganized

Effective December 31, 2004, the Division of Civil and Mechanical Systems (CMS) within the Directorate for Engineering of the National Science Foundation (NSF) has been reorganized into three clusters:

(1) Engineered Materials and Mechanics, (2) Intelligent Civil and Mechanical Systems, and (3) Infrastructure Systems and Hazard Mitigation. The groups identify three higher-level themes within which the 12 CMS programs are clustered. According to a letter issued by CMS Division Director Galip Ulsoy, the reorganization uses the available program officer positions to respond to increasing proposal pressures in emerging areas such as nanomechanics, biomechanics, smart structures, and mechatronics. It also accommodates the transition from the construction phase to the operations and research phase of the Network for Earthquake Engineering Simulation (NEES).

CMS funds research that contributes to the knowledge base and intellectual growth in the areas of mechanics and materials, infrastructure construction and management, dynamics and control, sensing for civil and mechanical systems, geotechnology, structures, and the reduction of risks and casualties induced by earthquakes and hazards. The division also encourages cross-disciplinary partnerships to conduct pioneering research where the newer areas intersect with traditional civil and mechanical engineering fields, to promote discoveries using technologies such as sensors, adaptive systems, nanotechnology, and simulation.

The three CMS clusters each support four programs. Each of the 12 programs has a program director,

and the division also has a division director and eight support staff. The program directors for areas most closely aligned with the membership of EERI are as follows:

- Richard Fragaszy, Geotechnical and Geohazards Systems
- Steven McCabe, Structural Systems and Hazard Mitigation of Structures
- Dennis Wenger, Infrastructure Systems Management and Hazard Response
- Joy Pauschke, Network for Earthquake Engineering Simulation (NEES)
- Shi-Chi Liu, Sensor Technologies for Civil and Mechanical Systems
- Eduardo Misawa, Dynamic Systems
- Ken Chong, Mechanics and Structure of Materials
- Yip-Wah Chung, Materials Design and Surface Engineering
- Jorn Larsen-Basse, Infrastructure Materials and Structural Mechanics
- Jesus de la Garza, Information Technology and Infrastructure Systems
- Mario Rotea, Control Systems

More information about CMS is available at [www.nsf.gov/div/index.jsp?div=CMS](http://www.nsf.gov/div/index.jsp?div=CMS).

---

## Job Opportunity

### NSF Program Director

The National Science Foundation seeks a qualified candidate to be Program Director for the Structural Systems and Hazard Mitigation of Structures Program in the Division of Civil and Mechanical Systems. A program director directs the implementation, review, funding, post-award management, and evaluation of the program, and contributes to the intellectual integration with other programs supported by the division.

The desired starting date for this appointment is July 2005. The complete job announcement is available at [www.nsf.gov/pubs/2005/e20050057/e20050057.pdf](http://www.nsf.gov/pubs/2005/e20050057/e20050057.pdf).

## Moehle Lecture

*continued from page 1*

performance assessment methodology being developed by PEER researchers that incorporates practical loss estimation procedures in a rigorous yet efficient way.

Compared to the prescriptive design approach, a performance basis can potentially reduce code complexity and the cost of facilities, make the intent of building regulations understandable, and allow design to be tailored to individual buildings and uses.

The language of PBEE recognizes the range of stakeholders and develops measures for specific stakeholders. It expresses seismic hazard in terms of a scenario that has a reasonable probability of occurring over 20 to 50 years, and the probability of exceedance in 20 to 50 years. Risk is expressed in terms of ranges of losses, maximum probable loss, and risk of financial ruin. An open question is how tight controls should be to ensure consistency and accountability, versus how much discretion should be granted in promoting flexibility.

A webcast of the lecture that was presented at UC Berkeley on February 28, 2005, is accessible through the PEER homepage (<http://peer.berkeley.edu>). It shows an alternate video of the speaker and digital versions of the slides. The presentation was co-hosted by PEER, the EERI/UC Berkeley Student Chapter, and the SEMM Group of UC Berkeley's Dept. of Civil & Environmental Engineering.

The PEER web site has a link to the download page for obtaining a free version of RealPlayer software, which is required to view the webcast.

Groups who wish to invite Moehle to present the 2005 Distinguished Lecture should contact him directly.

## News of the Institute

### Allen and Sharpe Named EERI Honorary Members

The EERI Board of Directors has voted to name Clarence R. Allen and Roland L. Sharpe honorary members of the Institute. Honorary membership is awarded to recognize sustained and outstanding contributions either in the field of earthquake engineering or to EERI and the pursuit of its objectives.



*Clarence R. Allen*

**Clarence R. Allen**, professor emeritus of geology and geophysics at the California Institute of Technology, was awarded honorary membership in recognition of his many contributions to earthquake risk reduction, for his leadership in fostering knowledge about earthquake hazards and the interface between earth science and engineering, and for his service as president of both the Geological Society of America and the Seismological Society of America. He has effectively bridged the geophysical, geological, and engineering communities.

Allen received his B.A. degree in physics from Reed College in 1949, and his M.S. and Ph.D. degrees in geology and geophysics from the California Institute of Technology in 1951 and 1954. His long career at Caltech has been devoted primarily

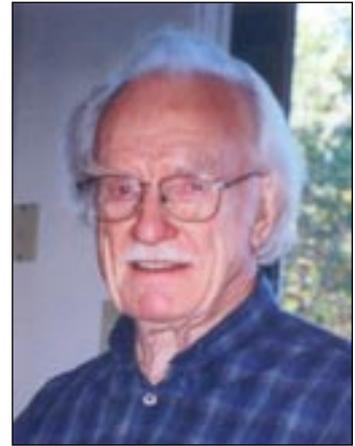
to research and teaching in glaciology, structural geology, seismotectonics, and earthquake hazard assessment. Much of his fieldwork has been devoted to studies of active earthquake faults worldwide.

He has also served as a consultant on seismic hazards to major critical structures such as dams and nuclear power plants in some 20 countries. As a result of his global experience, in 1975 he wrote the influential paper "Geologic Criteria for Evaluating Seismicity," which laid the foundation for incorporating geologic information into the analysis of seismic hazards. He played a key role in incorporating seismology into the process of assessing techniques for storing radioactive waste.

Allen was elected to membership in the American Academy of Arts and Sciences in 1974 and to both the National Academy of Sciences and the National Academy of Engineering in 1976. In 1995 he was EERI's Distinguished Lecturer. Also in 1995, he was awarded the Medal of the Seismological Society of America, its highest honor. In 1999, he was awarded the EERI's Housner Medal, also its highest honor.

He is the subject of EERI's oral history published in 2003, which can be ordered online from [www.eeri.org/cds\\_publications/catalog/](http://www.eeri.org/cds_publications/catalog/). In the upper left corner, click on "Publications," and then click on "Oral History Series."

**Roland L. Sharpe**, a consulting structural engineer and EERI member since 1970, was awarded honorary membership in recognition of his major contributions to earthquake engineering and the practice of seismic design and construction, as exemplified by his design practice, his work with the American Society of Civil Engineers (ASCE), his leadership in establishing and serving as the first executive director of the Applied Technology Council (ATC), and his leadership in cooperative exchanges with Japanese earth-



*Roland L. Sharpe*

quake engineers. Sharpe served a term on EERI's Board of Directors from 1971 to 1974. He was the first foreigner to receive honorary membership in the Japan Structural Consultants Association.

After earning B.S.E. and M.S.E. degrees from the University of Michigan, in 1950 Sharpe joined the engineering firm of John A. Blume and Associates in California. He was the principal seismic consultant and design reviewer for the U.S. Atomic Energy Commission for 20 nuclear power plants.

He chaired the SEAOC Ad Hoc Committee to develop a plan to transfer more effectively the results of seismic-resistant research to the practicing engineer. This committee recommended that SEAOC found ATC in 1971, where Sharpe served as executive director until 1984. ATC reports have had a major worldwide impact on building codes and seismic hazard planning. Sharpe was vice-chairman of the SEAOC Vision 2000 Committee, which resulted in the publication in 1995 of *Vision 2000, Performance-Based Seismic Engineering of Buildings*.

Sharpe continues to work on the development of seismic and structural design criteria, assessment and strengthening of hazardous buildings, peer review of major retrofit and new design projects, and the design of new projects.

## Publications

### The Economics of Natural Hazards

Edward Elgar Publishing recently announced the publication of *The Economics of Natural Hazards*. Edited by University of Pennsylvania faculty members Howard Kunreuther and Adam Rose (an EERI member), this two-volume set is a collection of some of the most significant, previously published, papers by leading academics in this field. The set investigates the impact of natural disasters on national and regional economies. Volume I considers the effects of both the perception of risk and direct losses. It explores the costs of reducing the impact of disasters by, for example, forecasting, self-protection, and building physical structures.

Volume II deals with mitigating the costs of disaster through insurance, including financial coverage for catastrophic loss, and investigates the development of private-public partnerships for managing disasters and the problems of reconstruction and recovery. A final section addresses the particular problems of disasters in developing countries.

More information about the set is available from [www.e-elgar.com](http://www.e-elgar.com).

### Catastrophe Modeling: A New Approach to Managing Risk

Springer recently announced publication of *Catastrophe Modeling: A New Approach to Managing Risk*, edited by EERI member Patricia Grossi of Risk Management Solutions and Howard Kunreuther of the Wharton School at the University of Pennsylvania. This book illustrates the nature of uncertainty in different case studies in the context of catastrophe modeling. It systematically analyzes how models can be used

for assessing and managing risks of natural and human-caused extreme events. It provides information to decision makers, risk managers, and policy makers on managing the impacts of catastrophe risks in both the public and private sectors.

This book brings together the collective wisdom of the Wharton team and the three leading firms in this field (EERI Subscribing Members AIR Worldwide and Risk Management Solutions, as well as EQECAT). They examine the role of catastrophe modeling in rate setting, portfolio management, and risk financing, and in developing risk management strategies for reducing and spreading the losses from future disasters. The authors illustrate how uncertainty and risk transfer mechanisms affect the analysis of mitigation using three model cities (Oakland and Long Beach, California; and Miami and Dade Counties, Florida).

The book is available in both hardcover (\$149) and softcover editions (\$34.95) and can be ordered online at [www.springeronline.com](http://www.springeronline.com).

### Seattle Fault Scenario

*continued from page 1*

representatives from private industry, universities, and government agencies at all levels.

After presenting convincing projections of extensive damage to the Puget Sound region caused by a M6.7 earthquake, the scenario work group listed four top priorities to mitigate potential losses: (1) establishment of an independent state seismic safety commission; (2) implementation of risk reduction plans for critical public facilities; (3) retrofit of high-risk buildings; (4) protection of the transportation infrastructure.

The scenario planners asked community members to volunteer their expertise to advocate strong

mitigation policies. The Washington State EMD and EERI established a web site to publish the full scenario report and solicit community support for regional earthquake mitigation.

To access the Seattle scenario web site, visit <http://seattlescenario.eeri.org/>.

---

## Subscribing Member Posting

### RMS Postions

The Newark, California, office of Risk Management Solutions, an EERI Subscribing Member, has two job openings that require good programming skills, a high level of proficiency in data analysis and data manipulation software tools, and a working knowledge of GIS software applications.

The first is a **casualty modeler**. The primary responsibilities will be the research and development of computer-based casualty-injury risk models for earthquakes as well as man-made catastrophic events such as bomb blasts, review and interpretation of past-event data, and development of state-of-the-art practices in the field. Required: a master's or Ph.D. degree or equivalent in civil or structural engineering, social sciences, operations research, or statistics.

The second is a **man-made catastrophe modeler-engineer**. The primary responsibilities will be the modeling of various hazards in collaboration with a group whose members have backgrounds in statistics, mathematics, and engineering. Required: M.S. in civil or structural engineering or a related field and a minimum of two to three years of general engineering experience and model development. Please submit resumes to [recruiting@rms.com](mailto:recruiting@rms.com) and visit [www.rms.com](http://www.rms.com).

For information on becoming a Subscribing Member, visit [www.eeri.org](http://www.eeri.org).

## News of the Membership

### EERI Members Active as Mentors

At least seven members of EERI are active in the ACE Mentor Program in California. The organization introduces high school students to the possibility of careers in architecture, construction, and engineering (ACE). Teams of a half-dozen professionals meet after school hours, generally off campus, with teams of up to 25 upper-division high school students.

In their offices or at construction sites, the professionals demonstrate who they are and what they do. They describe the education and experience that got them where they are. Most important, the mature and young often become friends. It is easy to get to know role models in the informal context, fueled by pizza and sodas in the late afternoon.

During the spring term, teams often work on a hypothetical design. Students from ten high schools in the Los Angeles area are designing transit stations on their school grounds for an imaginary "ACE Transit System" to join all ten. At the end of the school year, scholarships are awarded to graduating seniors who go on to post-high-school programs in the ACE disciplines.

The program is national, in about 60 cities, and is described in detail at [www.ACEMentor.org](http://www.ACEMentor.org). Structural engineer Charlie Thornton founded the program in Manhattan in the 1990s. He remains the driving force nationally. He and all of the professionals involved volunteer their time.

Chapters in California are in the Bay Area (where David Bonneville is a leader) and in the Los Angeles metropolitan area (where Terry Dooley is chairman of the local ACE Board). There is a growing chapter in San

Diego and a new one in Palm Springs. Other EERI members participating actively include Gregg Brandow, John Gavan, Chris Hickman, Tom Sabol, and Eric Stovner.

If you wish to assist or would like to learn more about the program in your area, check first at the web site (above) and click on "Chapters." Contact information for David Bonneville and Terry Dooley is in the EERI roster. You might join a mentoring team or host a group of students for a show-and-tell in your office or at your lab. You would be most welcome to contribute to scholarship funds through the local chapters. Thirty-two "graduates" of the Los Angeles/Orange County program, all from inner-city schools, have gone on to higher education. In that area, the crowning event of the year will be the ACE Awards Banquet on May 17 at the Cathedral Conference Center in downtown Los Angeles, where students will present what they have accomplished.

The Bay Area chapter of ACE was started last year with three teams covering nine schools in San Francisco and San Jose. Forty-seven students and 33 mentors participated, and nine \$1,000 scholarships were given to graduating seniors. This year the program has grown to 75 students and 55 mentors covering 14 schools in San Francisco, Oakland, and San Jose.



*At the "All Schools Competition" in November 2004, a Jefferson High School student structure made with pasta sticks and glue guns fails on the shaking table, viewed by EERI member Eric Stovner and Fred Case (Clark Construction Group).*

## Publications

### Hawaii Coastal Hazard Mitigation Guidebook

The University of Hawaii Sea Grant College Program has announced the availability of a new 240-page book entitled *Hawaii Coastal Hazard Mitigation Guidebook* by Dennis Hwang. Covering all coastal hazards, including erosion, flooding, wave inundation, hurricanes, and tsunamis, the book has relevance for coastal hazards all over the world because it focuses on the development process.

Its concepts may assist in the redevelopment of coastal areas damaged by the Indian Ocean tsunami of December 26, 2004. The *Guidebook* was designed for planners, architects, landowners, homeowners, community groups, and government agencies. It complements the Federal Emergency Management Agency's *Coastal Construction Manual*, with a special emphasis on land use

planning and siting. The mitigation strategies presented are applicable to all natural hazards, whether they are along the coast of Hawaii or inland in another locality.

The price of this publication is \$25 within the United States and \$30 internationally, including postage. Payment by check or money order, payable to RCUH, may be mailed to the University of Hawaii Sea Grant College Program, Communications Unit, 2525 Correa Road, HIG 208, Honolulu, Hawaii 96822, USA.

## News of the Institute

### Summary Minutes of the December 7, 2004, Board of Directors Meeting

President Thomas O'Rourke called the meeting to order at 8:35 a.m. Also present were President-Elect Craig Comartin, Secretary/Treasurer Ron Mayes, Directors John Aho, Donald Ballantyne, Bruce Clark, Mary Comerio, Farzad Naeim, Executive Director Susan Tubbesing, and Administrative Assistant Valarie Austin. Sarah Nathe arrived at 9:30 a.m. Ballantyne left the meeting at 2:30 p.m. Jay Love was present for a portion of the meeting to report on the LFE program.

**NEHRP activities:** O'Rourke summarized the final NEHRP Reauthorization for FY 2005 through 2009. Compared to the amount appropriated for 2003, the new authorization includes an overall increase of more than 50% for 2005 and 74% for 2009. Most of the increase is attributable to ANSS, NEES operation and management costs, and NIST. Unfortunately, the base amounts for NSF and the USGS are lower by 20% and 10%, respectively, than the earlier House authorizing legislation. Advocacy must continue for NEES, and the NEHRP Coalition must persist in working to obtain adequate appropriations for NIST so that it can effectively carry out its role as the lead agency of NEHRP. O'Rourke will discuss these issues with Arden Bement, former head of NIST and new director of NSF.

**Secretary/Treasurer's Report:** Mayes reviewed the Report of Revenue and Expenses as of October 31, 2004. The combined balance sheet showed an opening fund balance of \$126,654, which was augmented by \$75,473 in excess revenues over expenses. EERI's total liabilities of \$310,117 combined with the total fund balance of \$202,127 equaled

\$512,244.

The Endowment Program's opening balance of \$680,723 was decreased by \$12,977 in expenses, for a total fund balance of \$667,746. Total liabilities in the amount of \$345,159 combined with the total fund balance of \$667,746 equaled \$1,012,906. The balance of the combined association, endowment, and technical programs equaled \$1,525,150.

The Investment Funds Report showed a balance of \$199,743 in the General Administrative Short-Term Investment Fund and \$37,352 in the Long-Term Investment Fund. The Endowment Fund balance totaled \$676,546, the Friedman Family Investment Fund totaled \$161,704, and the Shah Family Innovation Prize totaled \$174,655. The balance in the interest-bearing checking account was \$46,055. The combined funds in both the General Administrative checking and investment accounts totaled \$284,294.

The Grants Status Summary showed that of \$3,626,532 in active grants, \$2,488,269 has been expended, leaving a balance of \$1,138,263 as of October 31, 2004.

Mayes reviewed the Board's decision at the September 2004 Board meeting not to raise membership dues. The Board approved the 2005 budget, signaling its intent to adhere to a balanced budget by committing fully to making the technical seminars a success, reducing *Spectra* costs, and increasing membership.

**Finance Committee Report:** Mayes and the staff will meet again with the prospective new investment advisors to determine if their services meet the Institute's needs. If so, the Finance Committee will recommend changing the management of the Institute's investment portfolio, which Mayes will announce at the Annual Meeting.

**Executive Director's Report:** FEMA has requested that EERI become more involved in perfor-

mance-based design (PBD) projects. Tubbesing will propose projects focused on putting PBD principles into practice in developing the 2006 Statement of Work.

**Japan update:** NSF funded U.S. travel to the First International Conference on Urban Disaster Reduction and to the JAEE Kobe symposium in January 2005. EERI staff members have assisted the Japanese planners with coordination and logistics for both meetings.

**AIP proposal for oral histories and proceedings:** Tubbesing will let Bob Reitherman know that the Board supports his request to put all of EERI's oral histories on AIP's digital library platform, if the cost to do so and host the site is no more than \$4,000 annually, for as long as NSF funding is available. Once that funding is depleted, the histories will have to move to the Institute's web site.

**Honors Committee:** The Board enthusiastically accepted the committee's nominations for the Housner Medal, Honorary Membership, and the 2003 *Spectra* Outstanding Paper Awards. The Board also requested that the committee be cognizant of the need to increase the participation of women and younger members on the Honors Committee in the future.

The Board agreed with the Honors Committee's suggestion that active government employees be recognized with a "Distinguished Government Service Award." The Board will encourage the committee to research what would be required to create such an award and report back.

**Learning from Earthquakes Report:** Jay Love, LFE Committee Chair, joined the meeting to report on the LFE program. Two teams traveled to the region in Japan affected by the Niigata earthquake. The second team was organized by the Geotechnical Earthquake Engineering Research Working Group

## Board Minutes

*continued from page 6*

(GEER) and supported by EERI. The teams tested several advanced technologies, including LiDAR (Light Detection and Ranging), GPS (Global Positioning System), GIS (Geographic Information Systems), and IMS (Internet Mapping Systems). With the capabilities provided by these advanced technologies, the teams identified specific research opportunities created by this event that contain important lessons for the United States. The potential of remote-sensing technologies promises to have an impact on how reconnaissance investigations are conducted in the future and will increase the importance of secondary and tertiary reconnaissance teams that are equipped to collect and utilize data. Tubbesing will send the research recommendations to the NEHRP agencies. Further discussions will be held with GEER to explore areas for mutual collaboration.

**LFE Committee recommendations:** Love reported that a workshop was held to conduct a

mid-term review of the LFE program. The committee and staff have been preparing a document to send to NSF that contains “nuggets” of LFE’s accomplishments during the course of the nearly 30 years of NSF support. This document will be distributed to the Board for their review and will be ready by the end of the year.

Love stated that LFE reconnaissance reports are being written for the Bam, Colima, and Gujarat earthquakes. The *Lessons Learned over Time* program is preparing materials for a training program on masonry construction in India and vernacular construction in Turkey.

LFE’s IT Committee has been working with Accela to refine and improve the field data collection process. Tests in Parkfield and Hollister raised serious questions about the utility of the technology for initial, quick reconnaissance. The equipment did not work reliably on the Niigata trip, and modifications are necessary to respond to the teams’ need for speed and efficiency.

### Special Projects and Initiatives

**Report:** The Small Grants Program for Developing Countries has awarded funding to three projects: a workshop for unskilled construction workers in India, publication in Spanish and English of an illustrated manual of safe construction techniques for reinforced masonry in Peru, and development of training materials for leaders in Istanbul neighborhoods to establish earthquake preparedness teams.

Ballantyne informed the Board that the Seattle scenario is nearing completion. The scenario will be rolled out at a public meeting in Seattle in February 2005. Guidelines to enable other communities to develop their own scenarios are also nearing completion.

**Annual insurance review:** The Board reviewed and approved the current status of insurance coverage for the Institute.

**Finalities:** Before adjournment, O’Rourke expressed the Board’s appreciation to departing Board members Ballantyne and Comerio for their valuable service and contributions during the last three years.

## News of the Membership

### Harris Elected to NAE

EERI member James R. Harris, president, J. R. Harris & Company Structural Engineers, Denver, has been elected to the National Academy of Engineering (NAE). Election to the NAE is among the highest professional distinctions accorded an engineer. Academy membership honors those who have made outstanding contributions to “engineering research, practice, or education, including, where appropriate, significant contributions to the engineering literature” and to the “pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering educa-

tion.” Harris was recognized for his contributions to the development, improvement, and implementation of modern standards for the design of buildings.

### Call for Papers

#### EE-21C in Macedonia

To mark its 40th anniversary, the Institute of Earthquake Engineering and Engineering Seismology (IZIIS-Skopje) at the Saints Cyril and Methodius University, Skopje, Republic of Macedonia, will host an International Conference on Earthquake Engineering in the 21st Century (EE-21C), August 27 to September 1, 2005. Authors are invited to submit abstracts by **April**

**30, 2005**, in one of the following topic areas: lessons from past earthquakes; strong ground motion; engineering seismology; earthquake hazard and risk assessment; geotechnical earthquake engineering; structural modeling, analysis, design and seismic safety; innovative techniques for reducing seismic impact; retrofit of structures; societal, economic, and planning aspects; and technologies and trends for disaster monitoring and reduction.

The abstracts must not exceed a single A4 page and should be submitted via e-mail as file attachments to **EE-21C@pluto.iziis.ukim.edu.mk**. After acceptance, eight-page papers will be due June 15, 2005. For further details, visit **http://www.iziis.edu.mk/EE-21C**.

## Job Opportunity

### UC Irvine Position

The Department of Civil and Environmental Engineering ([www.eng.uci.edu/cee](http://www.eng.uci.edu/cee)) at the University of California, Irvine, invites applications for one or two tenure-track faculty positions at the assistant or associate professor level in structural engineering, beginning as early as July 2005. Successful candidates will teach and develop extramurally funded research program(s) in advanced technologies for civil engineering structures and systems. A background in engineering mechanics and a doctoral degree from a civil or related engineering program is required. Candidates should mail an application by April 30, 2005, with a resume, a statement of qualifications, including teaching and research interests, and at least four references to EERI member Masanobu Shinozuka, or e-mail an attached Word or PostScript document to [jrhess@uci.edu](mailto:jrhess@uci.edu).

## Announcement

### CRSI Foundation Scholarships

The Concrete Reinforcing Steel Institute Foundation has announced the availability of scholarships for the 2005-06 academic year. The scholarships are intended to foster the development of practicing engineers in the field of site-cast reinforced concrete construction.

CRSI plans to award scholarships in the amount of \$2,500 each to seniors majoring in civil engineering or architectural engineering, and \$3,000 each to incoming graduate students (master's degree program) in civil engineering, structural engineering, or architectural engineering.

For more information, contact Lisa M. Kelly, e-mail [lkelly@crsi.org](mailto:lkelly@crsi.org), phone 847/517-1206, ext. 14. The deadline for receipt of applications is June 3, 2005.

## Announcement

### Nominations for WSSPC 2005 Awards

The Western States Seismic Policy Council (WSSPC) Awards in Excellence program recognizes achievement in different areas of earthquake mitigation, preparedness, and response. The intent of the awards is to bring greater visibility to exemplary state, county, and local programs and policies and to facilitate the transfer of those successful experiences to other states. Presented since 1996, the awards have been an effective method to share model programs and recognize the hard-working, creative, and innovative efforts within the earthquake hazards reduction community.

State, county, and city governmental and nonprofit agencies are eligible. Programs must be nominated by someone outside the nominated agency and must have been operational for at least one year. Awards are given in the following categories: mitigation efforts, response plans and materials, use of new technology, private-public partnership innovations, research projects, nonprofit agency efforts, legislation, and educational outreach programs to business or government, schools, and the general public. Selection criteria include creativity, effectiveness, and transferability.

2005 award winners will receive a plaque recognizing their achievement during the awards luncheon at the WSSPC Annual Conference in September in Boise, Idaho, and will have an opportunity to display their winning projects. Descriptions of each awarded program are included in an annual WSSPC publication and on the WSSPC web site. To learn more about the WSSPC Awards in Excellence program, visit [www.wsspc.org/Awards/index.html](http://www.wsspc.org/Awards/index.html). Nominations must be received in the WSSPC office by Friday, April 22, 2005.

## News of the Institute

### Endowment Fund Donors

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

#### \$25,000

David A. Friedman

Roger D. Borchardt

Craig A. Cole

Ronald T. Eguchi

W. D. Liam Finn

James S. Lai

David J. Leeds

Kevin L. Menninger

Ugo Morelli

Guy J. P. Nordenson

Craig W. Tillman

Akira Wada

Douglas A. Foutch

Jim Goltz

John F. Hall

Cynthia A. Hoover

Larry C. Hultengren

Ronaldo Luna

Kenneth A. Luttrell

Geoffrey R. Martin

William A. Mitchell

Andrew Mole

Mark R. Pierepiekarz

Chuck R. Real

Rolf Sagesser

Chris Willcox

Fred Ziaripour

#### \$2,000

John A. Martin & Associates, Inc.

#### \$1,000

Carl H. Josephson

#### \$500

Craig D. Comartin

#### \$250

Douglas J. Nyman

#### \$100-\$199

Daniel J. Alesch

Donald G. Anderson

#### Other Amounts

Scott Ashford

Robert Y. Chew

Ross Esfandiari

Paul Flores

## News of the Membership

### EERI Members Earn NCSEA Awards

The following firms with EERI members received 2004 Excellence in Structural Engineering awards at the National Council of Structural Engineers Associations Annual Meeting last fall. This award program honors some of the most innovative projects in the world.

**Baldrige & Associates Structural Engineers** of Honolulu received an Outstanding Project Award in the "New Buildings \$10 to \$30 Million" category for Oklahoma Hall, a new five-story bachelor enlisted quarters at Naval Station, Pearl Harbor, Hawaii. Oklahoma Hall is the first residential building in Hawaii (and possibly the nation) designed to meet the Department of Defense (DoD) Antiterrorism/Force Protection Construction Standards. At a minimum, the DoD Progressive Collapse Standards require that any one exterior load-bearing (vertical or horizontal) element be removed from the structure without disproportionate collapse. For this particular project, the Navy requirements were more stringent, including the removal of all elements within a prescribed distance from the exterior face of the building. The structural system chosen, dubbed the "BASE Hanger System," is a multihazard solution, providing progressive collapse mitigation, as well as resistance to other hazards such as earthquakes and hurricanes.

**KPFF Consulting Engineers** of Seattle received an Outstanding Project Award in the "Bridges and Transportation Structures" category for the 400-foot Amgen Helix Pedestrian Bridge in Seattle's Amgen's Research and Technology Center. The structure, reminiscent of the spiral-staircase shape of DNA, is composed of three interconnected arches. Two of the arches act as counterbalances to take out the lat-

eral thrust in the main arch. The lateral thrust is generated by the eccentricity of the main arch as it traverses from side to side. The arches are interconnected by elegant curved truss suspenders that transfer the loads between arches. Lateral loads are resisted by the concrete elevator towers at the abutments of the bridge. The floor and curved roof decks are designed as truss diaphragms to distribute the lateral loads to the towers. At its highest point, the main arch is 60 feet above the railroad tracks.

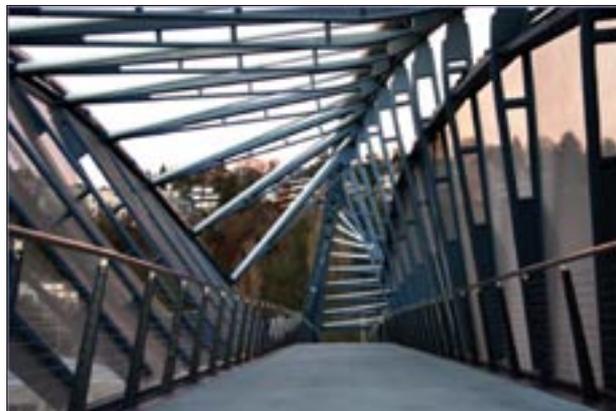
**Nabih Youssef & Associates, Inc.** (an EERI Subscribing Member) of Los Angeles received an Outstanding Project Award in the "Other Structures" category for the California Nanosystems Institute at the University of California at Los Angeles. The structural system not only responds to the many complications of the building type, but also is a significant element in the overall architectural design. The unique requirements of the site led to the creative solution to span the portions of the new laboratory facility over the top of an existing parking structure. Trusses of 188 feet span over the garage, creating an interstitial space for mechanical equipment that allows for future flexibility. Horizontal and vertical expansion demanded day lighting levels that respected an ideal scientific environment, with the labs requiring strict vibration control.

**Walter P. Moore and Associates** of Houston received a Merit Award in

the "New Buildings over \$30 Million" category for the Orange County Convention Center Expansion in Orlando, Florida. The three million square feet of expansion included one million square feet of uninterrupted exhibit space, the design of which consists of a grid of 180-foot-long trusses spanning in both directions over 40-foot columns. Layers of steel arches and bracing members were erected one slice at a time, simplifying erection procedures. The design also features a 1,400-foot-long pedestrian bridge erected in 200-foot sections over a busy intersection.

**Hardesty & Hanover, LLP**, of New York City received a Merit Award in the "Bridges and Transportation Structures" category for the Route 7 Bridge over Passaic River in North Arlington, New Jersey. This replacement bridge is a new tower driver vertical lift bridge that is composed of two 81-foot approach spans, two 16-foot 6-inch tower spans, and a 125-foot lift span. Each tower has eight 100-foot columns housing the support machinery for a bridge with a 1.2-million-pound lifting capacity.

**Skidmore, Owings and Merrill** of Chicago received a Merit Award in the "Other Structures" category for the Schubert Band Shell in St. Paul, Minnesota, located on Raspberry Island in the middle of the Mississippi River. This structure had already received a 2004 American Institute of Steel Construction engineering excellence award (see page 2 of the May 2004 *EERI Newsletter*).



For more information on the awards and photos of each winning structure, visit [www.ncsea.com](http://www.ncsea.com).

*Amgen Helix Pedestrian Bridge in Seattle, Washington.*

## Call for Papers

### 2005 SEAOC Annual Convention

The Structural Engineers Association of California has issued a call for papers for its 2005 Annual Convention, to be held in San Diego, California, September 28 to October 1. The technical program will highlight papers in the following areas: (1) practical design, focusing on the design or retrofit of buildings, bridges, marine structures, tanks, and towers; (2) recent research, new methods of analysis, and the use of new materials or new applications of traditional materials; and (3) the business of structural engineering, addressing new markets, liability, fees, human resources, insurance, publicity, or professional services.

A brief abstract is due by May 1, 2005, to Casey Whitsett of Hope Engineering in San Diego; fax: 619/235-4675. A complete copy of the call for papers is available at [www.seaoc2005.com](http://www.seaoc2005.com).

### 250th Anniversary of Lisbon Earthquake

A consortium of Portuguese associations, institutes, and universities is sponsoring an international conference commemorating the 250th anniversary of the 1755 Lisbon earthquake, to take place November 1-4, 2005, in Lisbon, Portugal. This quake was influential not only in Portugal but also in all European and North African countries, where its devastating effects were felt. The socioeconomic consequences of the event were great and affected the future organization and development of Portugal.

Two hundred and fifty years after the 1755 earthquake, the opportunity to bring together scientists, engineers, historians, philosophers, urban planners, architects, econo-

mists, and policy makers can foster an integrated view on our global perception of natural disasters and how society must deal with them.

Authors are invited to submit extended abstracts, with a maximum of 500 words, on one of the following topics: (1) socioeconomic impact on communities exposed to earthquakes and tsunamis; (2) urban planning for natural hazards, information, and warning; (3) propagation and local effects of seismic destruction; (4) earthquake-resistant building under environmental constraints; (5) new approaches to the seismogenesis of the 1755 earthquake; and (6) global response to large earthquakes.

The deadline for submission of abstracts is April 30, 2005. Authors will be notified of acceptance May 31. Papers will be due September 15, 2005. To submit an abstract, visit [www.mundiconvenius.pt/2005/lisbon1755/](http://www.mundiconvenius.pt/2005/lisbon1755/).

---

## Announcements

### CSMIP05 Seminar on Utilization of Strong-Motion Data

The California Strong Motion Instrumentation Program (CSMIP) in the California Geological Survey of the state's Department of Conservation will present a one-day seminar on "Utilization of Strong-Motion Data."

The purpose of this 16th annual seminar is to transfer recent research findings on strong-motion data to practicing seismic design professionals, earth scientists, and post-earthquake response personnel. It will provide information that will be useful immediately in seismic design practice and post-earthquake response, and in the longer term, in the improvement of seismic design codes and practices. The seminar will be held on Tuesday, May 10, 2005, at the Omni Hotel in Los

Angeles.

Organized into four sessions, the seminar will feature presentations with the following titles: Strong-Motion Data from the M6.0 Parkfield Earthquake of September 28, 2004; Animation of Ground Shaking for California Earthquakes; Quantifying CISN ShakeMap Uncertainty; Visualization of Nonlinear Seismic Behavior of the Interstate 5/14 North Connector Bridge; Automated Post-Earthquake Damage Assessment and Safety Evaluation of Instrumented Buildings; A Data-Driven Methodology for Assessing the Impact of Earthquakes on the Health of Building Structural Systems; Observations on the M9.0 Sumatra, Indonesia, Earthquake of December 26, 2004; and Tsunami Mitigation Programs and Preparedness in California.

The seminar will close with a field trip to the seismically retrofitted Los Angeles City Hall. For additional information and to download a registration form, visit [www.consrv.ca.gov/CGS/smip/seminar.htm](http://www.consrv.ca.gov/CGS/smip/seminar.htm).

### CIG News and an Invitation

The Computational Infrastructure for Geodynamics (CIG) is a newly formed NSF center in support of earth science research in the United States. As a fledgling organization, the CIG invites you to visit its new web site and sign up for the CIG listservs. Please take this opportunity to keep current on CIG developments as it recruits its staff and prepares for a range of summer workshops.

CIG is also in the process of forming its Science Steering Committee (SSC). Submit your nominations for the SSC to [nominations@geodynamics.org](mailto:nominations@geodynamics.org).

For more information about CIG, visit [www.geodynamics.org](http://www.geodynamics.org).

## CALENDAR

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

### APRIL

4. Sumatra EQ & Indian Ocean Tsunami Briefing, Vancouver B.C., Canada. Info: [www.eeri.org](http://www.eeri.org) (3/05)

18. Same as above, Portland, OR. Info: [www.eeri.org](http://www.eeri.org) (3/05)

6-9. North American Steel Construction Conference, Montreal, Canada. Info: [www.aisc.org/nascc](http://www.aisc.org/nascc) (8/04)

7. EQ Hazard in Oregon, Portland, OR. Info: [www.atcouncil.org](http://www.atcouncil.org) (3/05)

8-9. Evaluation & Mitigation of Seismic Hazards Course, San Diego, CA. Info: [www.sandiegogeologists.org/SeisHaz2005.pdf](http://www.sandiegogeologists.org/SeisHaz2005.pdf) (3/05)

24-29. EGU 2005 — European Geosciences Union General Assembly, Vienna, Austria. Info: [www.copernicus.org/EGU/ga/egu05/index.htm](http://www.copernicus.org/EGU/ga/egu05/index.htm) (1/05)

### MAY

1-4. UCLA Conf. on Public Health & Disasters, Woodland Hills, CA. Info: [www.cphd.ucla.edu/](http://www.cphd.ucla.edu/) (11/04)

2-6. 26th Ann. Short Course on Grouting Fundamentals & Current Practice, Golden, CO. Info: [www.mines.edu/outreach/cont\\_ed](http://www.mines.edu/outreach/cont_ed) (3/05)

10. SMIP05 Seminar for Utilization of Strong-Motion Data, Los Angeles, CA. Info: [www.conservation.ca.gov/cgs/smip/seminar.htm](http://www.conservation.ca.gov/cgs/smip/seminar.htm). See page 10. (4/05)

15-18. Disaster Resistant CA Conf., Sacramento, CA. Info: [www.sjsu.edu/cdm/drc05](http://www.sjsu.edu/cdm/drc05) (11/04)

16-19. SismoAdobe 2005, Lima, Peru. Info: [www.pucp.edu.pe/eventos/SismoAdobe2005](http://www.pucp.edu.pe/eventos/SismoAdobe2005) (2/05)

30-June 1. ERES 2005, Skiathos, Greece. Info: [www.wessex.ac.uk/conferences/2005/eres05](http://www.wessex.ac.uk/conferences/2005/eres05) (7/04)

### JUNE

7-9. SEM Annual Conf. on Experimental & Applied Mechanics & Concurrent Symposia, Portland, OR. Info: [www.sem.org](http://www.sem.org) (10/04)

**8-12. 10th Canadian Masonry Symposium, Banff, Alberta, Canada.** Info: <http://www.ucalgary.ca/~tenthcms/> (4/05)

20-22. 12th Int'l Conf. on Comp. Methods & Experimental Measurements (CMEM 2005), Malta. Info: [www.wessex.ac.uk/conferences/2005/cmeme05/](http://www.wessex.ac.uk/conferences/2005/cmeme05/) (10/04)

### JULY

10-13. 15th World Conf. on Disaster Management, Toronto, Canada. Info: [www.wcdm.org](http://www.wcdm.org) (11/04)

24-30 INCEED 2005, Charlotte, NC. Info: [www.iseg.giees.uncc.edu](http://www.iseg.giees.uncc.edu) (2/05)

### AUGUST

21-24. Pipelines 2005, Houston, TX. Info: [www.asce.org/conferences/pipelines2005/](http://www.asce.org/conferences/pipelines2005/) (8/04)

22-24. ConMat'05, Vancouver, BC, Canada. Info: [www.civil.ubc.ca/conmat05/](http://www.civil.ubc.ca/conmat05/) (7/04)

26-27. 4th European Wkshp on Seis. Behavior of Irregular & Complex Structs., Thessaloniki, Greece. Info: [taz.civil.auth.gr/4ewics/](http://taz.civil.auth.gr/4ewics/) (2/05)

**27-September 1. Int'l Conf. on EQ Eng. in 21st Century (EE-21C), Macedonia.** See page 6. (4/05)

### SEPTEMBER

7-11. XV Mexican Nat. Conf. on EQ Eng., Mexico City, Mexico. Info: [www.smis.org.mx](http://www.smis.org.mx) (12/04, 3/05)

14-16. IABSE Structures & Extreme Events, Lisbon, Portugal. Info: [www.iabse.org/lisbon](http://www.iabse.org/lisbon) (7/04)

20-23. 3rd Int'l Struct. Eng. & Const. Conf., Shunan, Japan. Info: [www](http://www).

[tokuyama.ac.jp/tcss1/ISEC\\_03/](http://tokuyama.ac.jp/tcss1/ISEC_03/) (4/04)

25-29. Dam Safety 2005, New Orleans, LA. Info: [info@damsafety.org](mailto:info@damsafety.org) (3/05)

**28-Oct. 1. SEAOC Annual Convention.** San Diego, CA. See page 7. (4/05)

### OCTOBER

16-19. Council on Tall Bldgs. & Urban Habitat, New York, NY. Info: [www.ctbuh.org](http://www.ctbuh.org) (9/04)

**18-21. Involving the Community in Disaster Risk Reduction Programs, Punto Fijo, Estado Falcón, Venezuela.** Sponsor: Centro de Investigacion de Desastres and Universidad de Falcón. Info: Juan Murria, [murrias@cantv.net](mailto:murrias@cantv.net) (4/05)

### NOVEMBER

**1-4. 250th Anniversary of Lisbon EQ.** Lisbon, Portugal. See page 10. (4/05)

### 2006

#### APRIL

18-21. 8th U.S. Nat'l Conf. on EQ Eng. (8NCEE), EERI Annual Meeting, SSA Annual Meeting, Disaster Resistant California, San Francisco, CA. Info: [www.eeri.org](http://www.eeri.org) (5/04)

#### AUGUST

14-17. 5th Int'l Conf. on Behavior of Steel Structs. in Seismic Areas (STESSA), Tokyo, Japan. Info: [www.serc.titech.ac.jp/stessa2006](http://www.serc.titech.ac.jp/stessa2006) (2/05)

#### SEPTEMBER

3-6. 1st European Conf. on EQ Eng. & Seismology, Geneva, Switzerland. Info: [www.symporg.com/2006.html](http://www.symporg.com/2006.html) (1/05)



## News of the Institute

### World Housing E-Newsletter

Since its inception in 2001, the EERI-IAEE World Housing Encyclopedia (WHE) has compiled the knowledge of hundreds of volunteers to document the seismic safety characteristics of housing from around the world. This project has launched a quarterly electronic newsletter to encourage worldwide discussion about how to address the growing earthquake risk. The newsletter will feature an important topic in each issue. The first issue, e-mailed to EERI members on March 7, 2005, contained observations on the devastating earthquake and tsunami of December 26, 2004, that has changed the face of so many communities in Asia and beyond. Many of the emerging lessons from this disaster had been learned previously, a reminder of the importance of sharing what we know about disaster mitigation.

To continue to be informed of the status of the World Housing project through the newsletter, please register on the WHE web site as a "contact" using the following link: [www.world-housing.net/Contacts/AddNewContact.asp](http://www.world-housing.net/Contacts/AddNewContact.asp). Only those who register will receive future e-newsletters. If you have questions, contact [heidi@eeri.org](mailto:heidi@eeri.org).

## News of the Profession

### California Building Standards Commission Withdraws 2003 Code Recommendations

The California Building Standards Commission voted 8-2 on March 16, 2005, to rescind its code recommendations of July 2003. An article on page 2 of the November 2003 *EERI Newsletter* describes the previous recommendations in which the commission adopted a combination of the National Fire Protection Association and the International Code Council (ICC) as the basis for the next California building and fire codes.

This previous decision was made in spite of strong support for the ICC's International Building Code (IBC) by the Structural Engineers Association of California (SEAOC). SEAOC favored the IBC for a number of technical reasons including its superior seismic provisions.

The commission's 2005 action will allow state agencies to move forward with the adoption of the IBC, the International Fire Code (IFC), and the International Residential Code (IRC) in updating the state's building codes. California state agencies will bring proposed code amendments back to the Building Standards Commission for approval—a process that is estimated to take about two years. This approach is consistent with how California has adopted building codes in the past.

The Building Standards Commission's action followed a unanimous 7-0 recommendation issued on March 8 by the Commission's Coordinating Council, made up of the state's code-writing agencies, in support of the IBC, IFC, and IRC (collectively known as I-Codes). Public testimony was overwhelmingly in support of the IBC, IRC, and IFC being used in California.

The I-Codes are the most widely recognized building codes in the country. The IBC has been adopted and enforced in 44 states at the state or local level and in Washington, D.C. The Department of Defense, the Department of State, the Department of Commerce, the General Services Administration, the Department of Housing and Urban Development, and the National Parks Service also use the IBC. The ICC has extensive experience working with California state and local government agencies. The Uniform Codes (for example, the UBC) currently used in California are the predecessors of the I-Codes.



EARTHQUAKE ENGINEERING  
RESEARCH INSTITUTE  
499 14th Street, Suite 320  
Oakland, CA 94612-1934  
**ADDRESS SERVICE REQUESTED**

PRSR FIRST CLASS  
U.S. POSTAGE PAID  
Sundance Press  
85719