



## 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>

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### News of the Institute

## World Housing Encyclopedia Second Annual Farzad Naeim Prizes Awarded

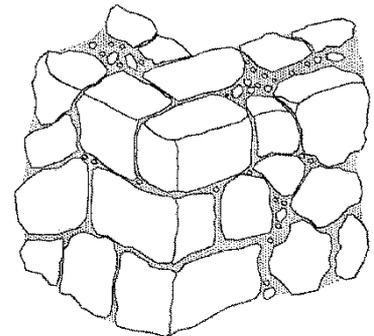
The Farzad Naeim Prize Selection Committee has awarded the following prizes for the best report contributions to the EERI/IAEE (International Association for Earthquake Engineering) World Housing Encyclopedia:

1. A \$1,500 prize to Marjana Lutman and Miha Tomazevič of Slovenia for their report on rubble stone masonry houses.
2. A \$1,000 prize to Igor E. Itskov, Marat U. Ashimbayev, and Nikolai B. Chernov of Kazakhstan for their report on prefabricated large-panel concrete buildings.
3. A \$500 prize to Ahmet Yakut and Polat Gülkan of Turkey for their report on tunnel-form reinforced concrete buildings.

The selection committee decided in the second year of the award that the winning reports should (1) cover a wide geographical range; (2) cover a range of building types that were in extensive general use, with a balance between engineered and non-engineered types; and (3) show, if a type is vulnerable, why it is vulnerable and whether it can be made safe.

The committee found that eight excellent reports, all of which were contributed several years ago, were in close contention. Through these awards, the committee would like to encourage future contribu-

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PARTLY CUT STONES AT CORNERS

*Sketch from Lutman and Tomazevič report on rubble stone masonry houses showing critical structural details at wall intersections.*

### News of the Profession

## Jim Davis and the University of California, Berkeley, Receive Alquist Awards



*Dr. James F. Davis*

At the Disaster Resistant California Conference (DRC) in May in Sacramento, the California Earthquake Safety Foundation (CESF) awarded EERI member **Dr. James F. Davis** the 2005 Alfred E. Alquist Medal for outstanding achievement in earthquake safety. Named in honor of State Senator Alfred Alquist, who had a long and distinguished career supporting earthquake safety in the California legislature, the Alquist Medal is awarded annually. CESF's mission is to raise the level of public awareness and

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## Obituary

### SCEC Founder Keiiti Aki, 1930-2005

Keiiti (Kei) Aki, one of the great figures of modern seismology and earth science, died May 17 after a fall on Réunion, a French island in the Indian Ocean, at the age of 75. A native of Yokohama, Japan, he spent more than 50 years broadening the frontiers of seismology through his study of seismic waves and the processes that drive earthquakes and volcanic activity.

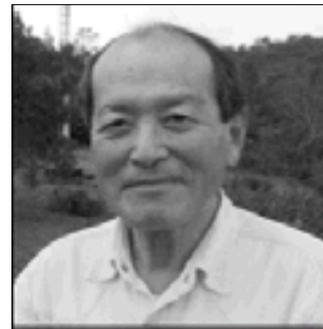
His pioneering work in the digital treatment of seismological observations enabled him to determine the structure and internal dynamics of the earth, along with the properties of the sources of earthquakes. He is co-author with Paul Richards of the seismologist's bible, *Quantitative Seismology*, which has influenced generations of young geophysicists.

After obtaining a doctorate at Tokyo University in 1958, Aki joined the

California Institute of Technology as a postdoctoral fellow in the early 1960s, where he worked with Frank Press, who later was recruited to start a physics-based geology program at the Massachusetts Institute of Technology. After teaching at the University of Tokyo for several years, Aki was Press' first faculty hire at MIT, where he worked for 18 years. In 1984, he moved to the University of Southern California to occupy the Keck Chair in the Earth Science Department. Under his guidance, the Southern California Earthquake Center (SCEC) was established in Los Angeles in 1991. More than 50 institutions around the world are partners with SCEC.

In 1995, Aki joined the Réunion Observatory of the Paris Institute of Global Physics, where he continued his work in the fields of volcanic seismology and the forecasting of eruptions, one of his biggest passions. He retired in 2000 and continued living on Réunion, which has an active volcano.

Aki is the author or co-author of



Keiiti Aki

some 200 papers on seismology. He received numerous distinctions, including medals from the American Geophysical Union and the European Geosciences Union. He was a member of the National Academy of Sciences and a fellow of the American Academy of Arts and Sciences. He was the tenth recipient of the Medal of the Seismological Society of America. He is probably the most widely cited seismologist of the latter half of the 20th century.

He is survived by his wife, Valerie Ferrazzani; two sons, Shota and Zenta; and two daughters, Kajika and Uka.

## News of the Institute

### 1,500 8NCEE Abstracts Received

The Technical Program Committee of the 8th U.S. National Conference on Earthquake Engineering (8NCEE) is pleased to announce that more than 1,500 abstracts have been submitted to the online submission web site. Authors will be notified of acceptance by August 1. The Technical Program Committee, chaired by Professor Jack Moehle of UC Berkeley, has determined that there will be approximately 120 technical sessions, augmented by roughly 15 special sessions with invited speakers, several panel discussions, and poster sessions.

The 8NCEE is part of the 100th Anniversary Earthquake Conference scheduled for April 18-22, 2006, in

San Francisco, commemorating the 1906 San Francisco earthquake, and including the SSA Centennial Meeting and the OES Disaster Resistant California Conference. Additionally, the Association of Bay Area Government's (ABAG) general assembly will also be held as part of the conference. ABAG will organize a public policy track with two or three concurrent sessions consisting of presentations by elected and appointed local government officials from the nine-county San Francisco Bay Area.

The organizing committee expects to welcome a number of international delegations. EERI has cooperative agreements with the primary

earthquake engineering associations in Australia, Canada, China, Japan, Mexico, and New Zealand. More than half of the abstracts were submitted by authors from 48 countries other than the United States, with the largest numbers as follows: Japan (178), China (93, including the People's Republic, Taiwan, and Hong Kong), Iran (64), India (60), Canada (55), Turkey (47), Italy (44), Mexico (39), and New Zealand (37).

So far, 30 organizations are co-sponsoring the conference, and many more are expected to sign on. They comprise an impressive array of national and international associations, research centers, and government agencies. For ongoing updates of this growing list and for more information about the conference, visit [www.1906eqconf.org](http://www.1906eqconf.org).

## News of the Institute

### EERI Seismic Risk Analysis Seminar

EERI's California members should have received in the mail a brochure, with registration information, about EERI's new one-day technical seminar on Seismic Risk Analysis for Engineers and Decision Makers. To register online, visit [www.eeri.org/news/meetings/05\\_tech\\_seminar\\_registration.php](http://www.eeri.org/news/meetings/05_tech_seminar_registration.php).

The seminar will feature the following topics:

- A general overview by Charlie Kircher, discussing factors that influence vulnerability and loss; types of loss estimates and levels of analysis required for each; uses of loss estimates; the role of intervention measures in reducing losses; historical methods of seismic risk analysis; and current technologies.
- Vulnerability of buildings and essential facilities by Ron Hamburger, covering examples of damage to buildings and essen-

tial facilities; components of vulnerability assessment; building failure modes and damage states; deterministic and probabilistic assessment methods; differences in assessment methods for individual facilities, groups of similar structures, and very large populations; and data requirements for such assessments.

- Vulnerability of lifelines by Michael O'Rourke, discussing examples of damage to transportation and utility lifelines; components of vulnerability assessment, including component failure modes and damage states; deterministic and probabilistic assessment methods; and data requirements for assessments.
- Economic and societal losses by Thalia Anagnos, dealing with types of social and economic losses; translation of engineering assessments of vulnerability into losses meaningful to stakeholders (deaths, dollars, and downtime); indirect earthquake impacts; automated loss assessment systems; use of GIS technology to communicate

findings to stakeholders; building economic loss methods; and decision-making tools.

- The stakeholder's perspective by Mary Comerio, discussing the importance of loss estimates to stakeholders; example applications by businesses, lifeline operators, government agencies, and emergency operations; organizational response to risk information; effects on education; and public awareness.

The seminar will be held on July 18 in San Francisco and July 19 in Los Angeles, from 12:30 to 6:30 p.m. At 11:30 a.m., a light lunch will be served at both seminars. The San Francisco location is the Sir Francis Drake Hotel Empire Room, 450 Powell Street. The Los Angeles location is near LAX at the Sheraton Gateway Hotel Gateway Ballroom, 6101 West Century Boulevard. CEU credits will be granted. The cost for members is \$175; for nonmembers, \$250. Nonmembers who join EERI can pay a total of \$300, for a total savings of \$150 (a \$75 reduction on the seminar fee and a \$75 reduction on membership dues).

## Donation Honors Authors of *Seismic Guidelines for Water Pipelines*

EERI's Endowment Fund recently received a generous \$2,000 donation from G & E Engineering. The firm's president, John Eiding, indicated that the contribution was made in honor of the authors who volunteered their time to write a new 265-page publication entitled *Seismic Guidelines for Water Pipelines*. The authors are Luke Cheng (San Francisco Public Utilities Commission), Mike Conner (San Diego Water Department), Craig Davis (Los Angeles Department of Water and Power), Bruce Maison (East Bay Municipal Utility District), Mike O'Rourke (Rensselaer Polytechnic Institute), Tom O'Rourke (Cornell University), Mike Matson (RMC Water and En-

vironment), Alex Tang (Canadian consultant), Frank Collins (Parsons), John Wesling (Geomatrix Consultants), and John Eiding. The guidelines were sponsored by the National Institute of Building Sciences and FEMA, under the guidance of Joseph Steller and Doug Honegger.

Published by the American Lifelines Alliance (ALA), these guidelines are intended to provide water utility personnel, pipe designers, and manufacturers with cost-effective approaches to seismic design of water pipelines. In 2003, the ALA found that water utilities in the United States, including those in regions of high seismic risk, install the

vast majority of their pipelines with little, if any, consideration for seismic resistance. A key reason for this deficiency was found to be the absence of adequate seismic design requirements in existing standards for the design and installation of water pipelines. Representing the current best practice, the guidelines identify informational gaps in the hope that engineers and manufacturers will address them and refine the guidelines before they are adopted in national standards.

To download *Seismic Guidelines for Water Pipelines* at no charge, visit [www.americanlifelinesalliance.org/Products.htm#WaterPipelines](http://www.americanlifelinesalliance.org/Products.htm#WaterPipelines).

## Alquist Awards

*continued from page 1*

commitment to earthquake safety in California.

As California's state geologist since 1978 until his recent retirement, Davis has been a leader in numerous aspects of seismic safety in the state, including major contributions in mitigation, preparedness, warning and response. He began work in 1978 to develop earthquake planning scenarios for potentially catastrophic earthquakes along the northern and southern San Andreas fault. Published in 1980 and 1982, these scenarios enabled emergency managers and planners to understand the complexity of an urban earthquake disaster for the first time. Under Davis's leadership, numerous additional scenarios were published, including one that combined damage from both earthquake ground motions and tsunami inundation along the Cascadia Subduction Zone. These scenarios were instrumental in promoting local mitigation efforts, developing and revising seismic safety elements, and driving emergency response exercises. Under Davis' direction, the California Geological Survey (CGS) expanded this work into the earthquake hazard zone maps, with information on local vulnerability, and secondary geological impacts such as landslides and liquefaction.

Jim Davis was a founding member of the Western States Seismic Policy Council. He also helped create and served as chair of the California Earthquake Prediction Evaluation Council (CEPEC), an advisory body of scientists appointed by the governor. With his help, the California Governor's Office of Emergency Services developed earthquake prediction and advisory response plans and a specific plan to respond to a predicted earthquake in Parkfield.

Under Davis's direction, the state developed a modern digital strong-



*Barrows Hall at UC Berkeley, originally completed in 1964, was retrofitted in 2002 by Degenkolb Engineers. The jacketing scheme increased the strength and stiffness of the building by adding shear walls at the ends and allowed the building to remain inhabited during the construction process.*

motion network with real-time capability to provide information for building code development. After the Northridge earthquake, he brought the CGS together with the California Institute of Technology and the U.S. Geological Survey in the TriNet Project to modernize the way earthquakes were monitored and recorded in southern California. This effort led to the California Integrated Seismic Network program that integrates data from the state's seismic networks into fundamental data for studying earthquakes and CISM ShakeMaps for emergency response.

CESF also honored the **University of California at Berkeley (UCB)** with the 2005 Alquist Certificate, which is awarded to organizations for outstanding achievement in earthquake safety. UCB sits astride the Hayward fault. In 1870, the university's first building, South Hall, was designed to include iron columns and rods in the brickwork for seismic reinforcement. The university continues to demonstrate a remarkable commitment to seismic safety. In the 1970s, the UC Regents adopted a policy on seismic safety to guide campuses in assessing the structural safety of buildings. The Berkeley campus began a pro-

gram of seismic improvements for masonry buildings, residence halls, libraries, and other high-occupancy buildings. In the mid-1990s, the campus surveyed all of its buildings again, using new criteria. The campus developed the Seismic Action Plan for Facilities Enhancement and Renewal (SAFER). With the SAFER program, Chancellor Robert M. Berdahl committed \$20 million per year to fund seismic improvements. The chancellor and FEMA Director James Lee Witt provided matching funds to undertake detailed campus loss studies and comprehensive risk management planning through the Disaster-Resistant Universities (DRU) Initiative. The SAFER program and the risk management planning that grew out of the DRU Initiative have increased the safety of the campus community and its capacity to sustain operations in the event of a major earthquake. The UC Berkeley retrofit program is a large and impressive undertaking. In addition, the university has made great progress in nonstructural hazard mitigation and business resumption planning, unique among large research universities. CESF recognizes UCB for its leadership in demonstrating state-of-the-art risk management to universities across the nation.

## WHE Prize

*continued from page 1*

tors, augmenting the housing types already in the encyclopedia and adding further examples of variations of existing types. On behalf of the selection committee, chair Chris Arnold complimented all the report authors, whose excellent documentation ensured that the reports are of real value to users. EERI greatly appreciates the significant effort that goes into these reports.

The other committee members were Vanja Alendar of Serbia/Montenegro and C.V.R. Murty of India. The committee was separate from the World Housing Encyclopedia editors and did not include any prize winners. The committee would like to thank Marjorie Greene and Svetlana Brzev, ex officio members of the committee, for their assistance, and, of course, Farzad Naeim for his generous contribution of the prize.

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## Announcement

### NSF Program Director

The Division of Civil and Mechanical Systems (CMS) announces a nationwide search for an individual to serve a one-year appointment as Program Director for the Infrastructure Management and Hazard Response (IMHR) Program at the National Science Foundation (NSF). Applications for this position will be accepted through July 15, 2005.

The IMHR program focuses upon multidisciplinary issues concerning the impact of natural, technological, and human-generated hazards upon critical infrastructure systems and society. The program seeks to integrate research from engineering, social, behavioral, political and economic approaches. For a complete announcement visit [www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=cms0503](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=cms0503).

## Publications

### Public Health Risks of Disasters

The National Academies Press recently published an 86-page book entitled *Public Health Risks of Disasters: Communication, Infrastructure, and Preparedness*. It summarizes a workshop on this topic that was held on June 22, 2004, in Washington, D.C., sponsored by the Disasters Roundtable and the Roundtable on Environmental Health Sciences, Research, and Medicine.

The workshop was convened as a contribution to the debate on the need to build capacity to deal with disasters. The agenda provided an opportunity to look at some of the most pressing research and preparedness needs for the health risks of disasters. The two groups comprise representatives from academia, industry, nongovernmental agencies, and government, whose perspectives range widely and represent the diverse viewpoints of researchers, federal officials, and the public interest.

After the terrorist attacks of September 11 and the subsequent anthrax attacks, the government and the public realized the need for more attention to the complex health risks associated with disasters. More emphasis has also been placed on long-term needs after disasters. Since 2001, there has been a greater need for integrated, up-to-date scientific information to respond to the rapidly changing circumstances that occur with disasters. This workshop summary captures the discussions and presentations by the speakers and participants, who identified the areas in which additional research is needed, the processes by which changes can occur, and the gaps in our knowledge.

The book is composed of four sections: communication and environ-

mental health; case studies in disasters; preparedness and response: systems, supplies, staff, and space; and practical considerations of emergency preparedness.

This publication can be downloaded from [www.nap.edu/catalog/11201.html](http://www.nap.edu/catalog/11201.html) or purchased for \$16.20 plus shipping.

### Dam Engineering

A. A. Balkema Publishers recently announced the publication of *New Developments in Dam Engineering*, edited by Martin Wieland, Qingwen Ren, and John S. Y. Tan, and containing the proceedings of the 4th International Conference on Dam Engineering, which took place October 2004 in Nanjing, China. The large number of papers from Chinese dam engineers and scientists provide an excellent overview on several aspects of the design and construction of major dam projects in China. These proceedings are therefore a useful reference, especially for those interested in developments in China. This conference focused on dam safety, which remains a priority for dam projects.

Today in the developed world, the safety of existing dams and measures for extending their economical life are of prime concern. In developing countries, the focus is on the construction of new dams. Subjects covered include state-of-the-art design of small and large dams; embankment dams, including concrete-faced rockfill dams (CFRD); concrete dams, including roller-compacted concrete dams (RCC); seismic aspects of dam design; dam safety evaluation; construction materials for dams; dam foundation and seepage; dam monitoring; rehabilitation and raising the height of existing dams; hydraulic aspects of dam design; environmental aspects; and reservoir sedimentation.

The cost of this book is US\$389 plus tax and shipping. To place an order, visit [www.balkema.nl](http://www.balkema.nl).

## News of the Profession

### Leahy Named Acting Director of USGS



Dr. Charles Groat

Effective June 17, 2005, Dr. Charles G. Groat resigned as director of the U.S. Geological Survey (USGS) to resume his distinguished academic

career. He plans to accept appointments as the Jackson Chair in Energy and Mineral Resources in the School of Geosciences and as the founding director of the Center for International Energy and Environmental Policy at the University of Texas at Austin. Groat had served as the 13th director of the USGS since 1998. During his term, he focused on integrated approaches to scientific inquiry.

On June 13, Interior Secretary Gale Norton named Dr. P. Patrick Leahy

as acting director of the USGS. He has been with the USGS since 1974 and had previously been the Survey's associate director for geology. He chairs the Federal Advisory Committee for the National Cooperative Geologic Mapping Program. He now has responsibility for federal earth science programs, which include worldwide earthquake hazards monitoring and research, geologic mapping of land and seafloor resources, volcano and landslide hazards, and assessments of energy and mineral resources. He also is responsible for all USGS international activities.

A recipient of both the USGS and Department of the Interior Meritorious Service Awards, Leahy has authored or co-authored more than 50 publications on an array of earth science topics. He received his doctorate in geology (1979) from Rensselaer Polytechnic Institute. He is a fellow in the Geological Society of America.

## News of the Profession

### Briefing on Puente Hills Fault Gets Attention

A press briefing was held on May 25 at the Southern California Earthquake Center (SCEC) on the University of Southern California campus in conjunction with the publication of the May issue of *Earthquake Spectra*. One of the articles, "Loss Estimates for a Puente Hills Blind-Thrust Earthquake in Los Angeles, California," details the findings of research on the recently discovered (1999) Puente Hills fault under the Los Angeles area.

Among the panel of experts participating in the briefing were several EERI members: Ned Field (lead author of the *Spectra* article), Rob Graves, Tom Jordan, Farzad Naeim, and Hope Seligson. They provided the press with information about the fault and loss estimates. Potential earthquakes on the Puente Hills fault could result in as many as 18,000 fatalities, 735,000 displaced households, and more than \$250 billion in total damage. The briefing was well attended and had extensive coverage in Los Angeles (every TV station, all major papers, radio), nationally (CNN and newspapers), and internationally (web sites, newspapers, and the Discovery Channel Canada). For images and more information, visit the SCEC web page [www.scec.org/research/050525puentehills.html](http://www.scec.org/research/050525puentehills.html).

The attention to the study continued into June. On June 15, Field and Seligson made a presentation at EERI's Southern California chapter meeting. On June 27, the study was highlighted at a California HAZUS Workshop and at a meeting of the Southern California HAZUS Users Group.



*Spatial distribution of total building damage, as a percent of total building exposure, for a magnitude 7.5 scenario earthquake along the Puente Hills fault (source: Field et al. 2005).*

## Announcement

### CIRES Job Openings

NOAA's National Geophysical Data Center (NGDC) / World Data Center in Boulder, Colorado, has two openings in natural hazards through the Cooperative Institute for Research in Environmental Sciences (CIRES). The positions are for a research associate (Ph.D.) and a professional research assistant (master's degree) working with NGDC's natural hazards group on tsunami-related research and database development. CIRES is a cooperative institute of the University of Colorado, Boulder, and the National Oceanic and Atmospheric Administration (NOAA). For more information concerning these openings, or to apply for either position, visit the CIRES web site: [cires.colorado.edu/jobs/](http://cires.colorado.edu/jobs/) or contact Paula Dunbar at NGDC ([Paula.Dunbar@noaa.gov](mailto:Paula.Dunbar@noaa.gov)).

## News of the Profession

### NRC Report on Seismic Monitoring

In 2003, the U.S. Geological Survey (USGS) commissioned a study by the National Research Council (NRC) on the economic benefits of improved seismic monitoring. Specifically, the USGS asked the NRC to examine how improved monitoring could reduce future losses and to estimate the benefits that could be realized by the full deployment of the Advanced National Seismic System (ANSS).

On June 10, the NRC released the 148-page report, entitled *Improved Seismic Monitoring—Improved Decision-Making: Assessing the Value of Reduced Uncertainty*. The NRC's Committee on Seismology and Geodynamics oversaw the study. The Executive Summary of the report is now available at the National Academy Press web site (<http://www.nap.edu/catalog/11327.html>), along with a browseable, pre-publication copy of the report.

According to William Leith, the ANSS coordinator for earthquake hazards in the USGS Geomagnetic Hazards and Global Seismograph Network, "This report represents the most rigorous effort ever to examine the costs and benefits of earthquake monitoring, and it clearly justifies current and future USGS investments in this area, including the full deployment of ANSS. The USGS is pleased with the report and commends the panel members, particularly the chair, (EERI former president) Chris Poland of Degenkolb Engineers, for their thoroughness and diligence in taking on such a difficult task." Other EERI members on the panel were James Goltz, Stephanie King, Adam Rose, Hope Seligson, and Paul Somerville.

Among the study's conclusions are the following:

- The potential benefits of im-

proved seismic monitoring far exceed the costs; annualized building and building-related earthquake losses are estimated to be about \$5.6 billion, whereas the annualized cost of enhanced seismic monitoring is about \$96 million, less than 2% of the estimated losses.

- The annual dollar costs for improved seismic monitoring are in the tens of millions, but the potential dollar benefits are in the hundreds of millions.
- Seismic monitoring provides the key to understanding how the built environment responds to significant earthquakes. Improved records offer the potential for fine-tuning the design process so that seismic safety requirements are adequately—but not excessively—met.
- Earthquake mitigation actions based on improved seismic information—and the resulting

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## Call for Papers

### World Conference on Disaster Reduction

A World Conference on Disaster Reduction (WCDR) will take place November 16-18, 2005, in Mumbai, India. It will focus on the corporate sector's role and responsibility in disaster management. It follows the WCDR held in Kobe in January 2005, where the need to involve all stakeholders in the disaster mitigation process was recognized.

Following are expected outcomes of the conference:

- Increased understanding of the importance of corporate sector involvement in disaster mitigation.
- Increased ability to mobilize the

sector's local, national, and international resources to supplement governmental efforts in providing effective response.

- An exhaustive reference manual entitled *Standard Operating Procedures for Disaster Reduction*. The manual will draw from the vast knowledge of professional disaster managers on the latest technology and best practices available in the world to meet disasters.
- A "Platform for Public-Private Partnership" will be launched, and the "Mumbai Declaration 2005" will sum up the future course of the conference.

Corporations will be encouraged to organize sessions and discuss their own preparedness, core strengths, on and off-site plans, resource management, response to major nation-

al and international calamities, and plans for the future to inculcate emergency management mechanisms in their business planning to help the vulnerable community.

While the private sector is beginning to play more engaged roles in disaster response and recovery on a voluntary basis, limited understanding currently exists about their activities because efforts have been piecemeal rather than coordinated. This conference will be an occasion for companies to reinvent their mission and vision and redefine their priorities in the enlightened context of social responsibility.

Abstracts, not to exceed 350 words, are due by July 31, 2005, to the online submission site at [www.wcdr.gfdl.org](http://www.wcdr.gfdl.org).

## Announcement

# USGS Creates Framework for National Volcano Early Warning System

In April, the U.S. Geological Survey (USGS) released the first-ever comprehensive and systematic review of the 169 U.S. volcanoes and established a framework for a National Volcano Early Warning System (NVEWS). The NVEWS calls for a 24/7 Volcano Watch Office and enhanced instrumentation and monitoring at targeted volcanoes.

The NVEWS report, which can be accessed online at [pubs.usgs.gov/of/2005/1164/](http://pubs.usgs.gov/of/2005/1164/), ranks the most dangerous U.S. volcanoes that pose a threat to human lives, property, and aviation safety and also discusses monitoring gaps at each volcano. According to the report, since 1980, 45 eruptions and 15 cases of notable volcanic unrest have occurred at 33 U.S. volcanoes. About half of the most threatening U.S. volcanoes are monitored at a basic level, and a few are well monitored with a suite of modern instruments. However, the report cautions, monitoring capabilities at many hazardous volcanoes are sparse or antiquated, and some hazardous volcanoes have no ground-based monitoring whatsoever.

Based on the NVEWS analysis and volcanic activity as of April 2005, three targets for volcano monitoring improvements are the highest priority :

1. The volcanoes erupting now—Mount St. Helens in Washington state, Anatahan in the Mariana Islands, and Kilauea in Hawaii—and the volcanoes that are showing periods of significant unrest—Mauna Loa in Hawaii and Mount Spurr in Alaska.
2. The 13 very high-threat volcanoes having inadequate monitoring, including nine volcanoes in the Cascade Range of the western United States: Rainier, Hood, Shasta, South Sister, Lassen, Crater Lake, Baker, Glacier Peak, and Newberry. Although Cascade volcanoes do not erupt frequently, they threaten major populations and developments. Four Alaskan volcanoes in this group include Redoubt, Makushin, Akutan, and Augustine.
3. Nineteen volcanoes in Alaska and the Mariana Islands that pose high risks to aviation but have no real-time ground-based monitoring to detect precursory unrest or the onset of an eruption. An additional 21 under-monitored volcanoes in Washington, Oregon, California, Hawaii, Alaska, the Mariana Islands, and Wyoming are also priority NVEWS targets.

Volcano monitoring in the United States is conducted by five volcano observatories supported primarily by the USGS Volcano Hazards Program with the help of universities and other government agencies through formal partnerships. They are the Hawaiian Volcano Observatory, the USGS Cascades Volcano Observatory, the Alaska Volcano Observatory, the Long Valley Observatory, and the Yellowstone Volcano Observatory. Under the federal Stafford Act, the USGS is responsible for issuing timely warnings of potential volcanic disasters to the affected populations and to civil authorities.

As a follow-up to releasing the NVEWS report, the USGS Volcano Hazards Program will convene workshops with key stakeholders including federal agencies, state and county emergency management agencies, the Consortium of U.S. Volcano Observatories, businesses, and private organizations to review and refine the NVEWS framework. The report was authored by USGS scientists and volcanologists: John W. Ewert, Marianne Guffanti, and Thomas L. Murray.

## Call for Papers

# Special Issue of ASCE Journal of Structural Engineering

Manuscripts are sought for a special issue of the *ASCE Journal of Structural Engineering on Precast/Prestressed Concrete Structures under Natural and Human-made Hazards*.

Possible topics include but are not limited to the analysis, testing, behavior, and design of precast/prestressed concrete structures under hazards such as earthquakes, wind, fire, blast, and impact; progressive collapse; code requirements; and recent developments in precast/prestressed concrete structures under extreme loading conditions. In general, manuscripts should reflect original research and technological advances.

Authors should e-mail an abstract of their manuscript in PDF format to the guest editor, Yahya C. Kurama, at [ykurama@nd.edu](mailto:ykurama@nd.edu) by August 31, 2005. The deadline for complete manuscripts is January 6, 2006.

All manuscripts should be submitted to ASCE through the normal journal submission process with a cover letter listing suggested reviewers and specifying that the manuscript is being submitted to the special issue. Copies of the cover letter and complete manuscript should be e-mailed in PDF format to Yahya C. Kurama at the same time as they are submitted to ASCE. Manuscript submissions in PDF format are strongly encouraged.

Additional information can be found at [www.nd.edu/~concrete/ASCE](http://www.nd.edu/~concrete/ASCE).



## News of the Membership

### Casarotti Wins 2005 Nevada Medal



*Chiara Casarotti*

EERI member Chiara Casarotti, a recent doctoral student at the European School for Advanced Studies in Reduction of Seismic Risk, the University of Pavia, Italy, is the recipient of the 2005 Nevada Medal for Distinguished Graduate Student Paper in Bridge Engineering. Casarotti's research was conducted under the direction of professors R. Pinho and G. Calvi.

Evaluators were from a group of internationally recognized authorities in bridge research and design. The award includes a plaque, a 14-K gold pin, and \$1,000. The funding for the award is provided through an endowment established by Simon Wong Engineering of San Diego, California. Mr. Wong completed bachelor's ('79) and master of science ('84) degrees in civil engineering at the University of Nevada, Reno.

The title of Casarotti's paper was "Displacement-Based Adaptive Pushover for Seismic Assessment of Bridges." Shortcomings of conventional pushover analysis for irregular bridges were addressed and an innovative method was introduced and verified against nonlinear dynamic analysis results. Casarotti recently accepted a postdoctoral position in the Department of Structural Engineering at the University of California, San Diego.

## News of the Profession

### 2005 WSSPC Awards in Excellence Announced

The Western States Seismic Policy Council (WSSPC) has announced the 2005 Awards in Excellence. The WSSPC Awards in Excellence program recognizes achievement in different areas of earthquake mitigation, preparedness, and response. Since 1996, the awards have been an effective method to share model programs and to recognize the hard-working, creative and innovative efforts within the earthquake hazards reduction community.

It is the intent of WSSPC's Awards in Excellence 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. Awards will be presented at the 2005 WSSPC Annual Conference in Boise, Idaho, on Wednesday September 14, 2005, at the awards luncheon. Winners will have an opportunity to display their winning projects at the conference. Descriptions of each awarded program will be included in an annual WSSPC *Awards in Excellence* volume, which can be ordered from [www.wsspc.org/Awards/index.html](http://www.wsspc.org/Awards/index.html).

The following are winners in the various categories:

#### **Overall Excellence in Mitigation and Outreach to Schools**

Washington State Military Department, Emergency Management Division  
Earthquake Program Video "Run to High Ground!"

#### **Outreach to Schools**

Los Angeles County Office of Emergency Management  
ESP Activity Book for Kids

#### **Outreach to Schools**

Utah Seismic Safety Commission and Utah Division of Emergency Services  
Student Research Grant Program

#### **Outreach to General Public**

Alaska Division of Homeland Security and Emergency Management  
Earthquake Program booklet: *Are You Prepared for the Next Big Earthquake in Alaska?*

#### **Outreach to General Public**

City of Seaside, Oregon  
Seaside Tsunami Outreach Project

#### **Mitigation**

Nez Perce County, State of Idaho  
Nez Perce County Local Hazard Mitigation Plan

#### **Research**

Utah Geological Survey  
Utah Quaternary Fault Parameters Working Group

#### **Response Plans and Materials**

Utah Seismic Safety Commission, Geoscience Standing Committee  
Booklet: *Utah Earthquake Ground-Shaking Maps: Which One Do I Use?*

## Announcements

### 2004 Sumatra EQ & Tsunami Symposium

The American Society of Civil Engineers (ASCE) and the Institution of Civil Engineers (ICE) are sponsoring the 2004 Sumatra Earthquake and Tsunami Symposium on October 25, 2005, from 1 to 5:30 p.m. at the Wilshire Grand Hotel in downtown Los Angeles, preceding the ASCE National Conference.

Co-sponsored by EERI, the symposium will include information on general science, impacts to lifeline facilities due to earthquake shaking and tsunami damage, and an expert panel discussion.

The ASCE earthquake team, which consisted of representatives of the Technical Council on Lifeline Earthquake Engineering (TCLEE); the Coastal, Oceans, Ports and Rivers Institute (COPRI); and ICE; conducted a post-earthquake investigation of the Asia earthquake and tsunami. Field investigations were conducted in Thailand, Sri Lanka, India, and Indonesia, and literature searches in other affected countries.

Team members gathered information on damage to water systems, sewer systems, gas and fuel pipelines, airports, ports, highways, bridges, telecommunications systems, electrical systems, and hospitals, and scientific information on geology, tsunami, and the environment. A damage summary publication was produced for the benefit of the engineering community.

For more information contact Tenzing Barshee (TCLEE), John Segna (TCLEE) or Kelly Barnes (COPRI) at 800/548-2723.

### Caltrans Bridge Research Conference

The California Department of Transportation (Caltrans) will be conduct-

ing a Bridge Research Conference, October 31-November 1, 2005, at the Holiday Inn Sacramento-Northeast in Sacramento, California.

The purpose of the conference is to disseminate the latest research findings from bridge-focused research projects funded primarily by Caltrans. Principal investigators will present timely and pertinent research findings of interest to the bridge engineering community.

A trade show will be held concurrently both days, showcasing the latest bridge-related products and services. Universities will be highlighting their research facilities and presenting current bridge research projects.

For more information, visit [www.dot.ca.gov/hq/esc/earthquake\\_engineering/workshop/](http://www.dot.ca.gov/hq/esc/earthquake_engineering/workshop/)

### 2005 WSSPC Annual Conference

The Western States Seismic Safety Council (WSSPC) will be holding its annual conference entitled NEHRP's Next Decade: Challenges for Implementation, September 11-14, 2005, at the Grove Hotel and Boise Centre in Boise, Idaho.

The conference objectives are to revisit the National Earthquake Hazards Reduction Program (NEHRP) goals and what the goals support—reduced exposure to loss of life, infrastructure, economies, and resources—in light of national realities: western earthquakes, rural earthquakes, and earthquakes in cash-strapped states and communities. Conference presentations will point to strategies for strengthening NEHRP and WSSPC.

Session titles include Quantifying the Hazard, Changing Behavior, Setting Priorities, Implementing ANSS, NEHRP Stakeholder Discussion, NEHRP in the Coming Decade, and the Future of the Earthquake Consortia. For more informa-

tion and registration forms, visit [www.wsspc.org/Events/ac2005/index.htm](http://www.wsspc.org/Events/ac2005/index.htm).

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## NRC Report

*continued from page 7*

reduction in uncertainty—would yield benefits many times the cost of seismic monitoring.

- In just one benefit area, performance-based engineering, dollar estimates for benefits are estimated at \$142 million annually—about three times the cost of operating the full ANSS.
- In the area of loss estimation modeling, improved monitoring information will greatly reduce uncertainty, potentially decreasing the cost of insurance and reinsurance, and shifting costs from disaster relief payments and grants (publicly financed) to insurance recoveries (financed through premiums).
- Improved seismic monitoring can significantly increase the accuracy of tsunami warnings and reduce the risk of missed warnings or costly false alarms, which constitute 75% of the warnings issued since 1948.
- The United States should rank seismic risk reduction as highly as other critical national programs, and should track the growth of risk nationally and make the necessary long-term investments to reduce it.
- Full deployment of ANSS offers the potential to reduce substantially both earthquake losses and their consequences, whereas existing funding levels are insufficient even to maintain present capabilities.

Congressional briefings will be held in the near future. The full report is available at <ftp://ftpext.usgs.gov/pub/er/va/reston/EHP>.

## 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**.

### JULY

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

18. EERI Seismic Risk Seminar, San Francisco, CA. Info: [www.eeri.org](http://www.eeri.org). See page 3. (6/05, 7/05)

19. EERI Seismic Risk Seminar, Los Angeles, CA. Info: [www.eeri.org](http://www.eeri.org). See page 3. (6/05, 7/05)

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

30-Aug 1. Int'l Conf. on Tsunami Disaster Management & Coastal Development, Chennai, India. Info: [www.tsunamiconference.in/](http://www.tsunamiconference.in/) (6/05)

### 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-Sept 1. Int'l Conf. on EQ Eng. in 21st Century (EE-21C), Macedonia. Info: [www.iziis.edu.mk/EE-21C](http://www.iziis.edu.mk/EE-21C) (4/05)

### SEPTEMBER

5-9. SAMCO Summer Academy, Salzburg, Austria. Info: [www.samco.org](http://www.samco.org) (6/05)

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, 6/05)

**11-14. WSSPC Annual Conf., Boise, ID.** See pages 9 & 10. (7/05)

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

17-25. Association of Engineering Geologists 48th Annual Meeting, Las Vegas, NV. Info: [www.aegweb.org](http://www.aegweb.org) (5/05)

20-23. 3rd Int'l Struct. Eng. & Const. Conf., Shunan, Japan. Info: [www.tokuyama.ac.jp/tcss1/ISEC\\_03/](http://www.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)

26-28. Kuwait 1st Remote Sensing Conf., Kuwait. Info: [www.kuwaitremotesensing.com](http://www.kuwaitremotesensing.com) (5/05)

28-Oct 1. SEAOC Annual Convention, San Diego, CA. Info: [www.seaoc2005.com](http://www.seaoc2005.com) (4/05)

### OCTOBER

3-15. 8th Workshop on Nonlinear Dynamics & EQ Prediction, Trieste, Italy. Info: [agenda.ictp.trieste.it/smr.php?1676](http://agenda.ictp.trieste.it/smr.php?1676) (5/05)

11-12. 1st Greek-Japan Workshop on Seismic Design, Observation, & Retrofit of Foundations, Athens, Greece. Info: [www.ntua.gr/gj-workshop](http://www.ntua.gr/gj-workshop) (6/05)

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, Venezuela. Info: Juan Murria, [murrias@cantv.net](mailto:murrias@cantv.net) (4/05)

**25. 2004 Sumatra EQ & Tsunami Symposium**, Los Angeles, CA. See page 10. (7/05)

**31-Nov 1. Caltrans Bridge Research Conf.**, Sacramento, CA. See Page 10. (7/05)

### NOVEMBER

1-4. 250th Anniversary of Lisbon EQ, Lisbon, Portugal. Info: [www.mundiconvenius.pt/2005/lisbon1755/](http://www.mundiconvenius.pt/2005/lisbon1755/) (4/05)

[www.mundiconvenius.pt/2005/lisbon1755/](http://www.mundiconvenius.pt/2005/lisbon1755/) (4/05)

6-8. 5th Conf. Structural Analysis of Hist. Constr., New Delhi, India. Info: [www.civil.uminho.pt/sahc2006](http://www.civil.uminho.pt/sahc2006) (6/05)

**16-18. World Conf. on Disaster Reduction**, Mumbai, India. See page 7. (7/05)

16-19. IX Chilean Seismology & EQ Eng. Meeting, Concepción, Chile. Info: [www.achisina2005.udec.cl](http://www.achisina2005.udec.cl) (5/05)

**25-27. AEES (Australian Earthquake Engineering Society) 2005 Conference**, Albury, NSW, Australia. Info: [www.aees.org.au/](http://www.aees.org.au/) (7/05)

### 2006

#### JANUARY

31-Feb. 2. IMAC-XXIV: Conf. on Struc. Dynamics, St. Louis, MO. Info: [www.sem.org](http://www.sem.org) (6/05)

#### 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). See page 2. (5/04, 7/05)

#### 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

# EERI/FEMA Graduate Fellowship Awarded



*Troy Morgan*

Troy Morgan, a Ph.D. candidate in structural engineering at the University of California, Berkeley, has been selected as the 2005-2006 NEHRP Graduate Fellow in Earthquake Hazard Reduction. EERI awards this fellowship each year in a cooperative program with the Federal Emergency Management

Agency's National Earthquake Hazards Reduction Program. The award is given to foster the participation of capable individuals in furthering the goals and practice of earthquake hazard mitigation. The fellowship provides \$12,000 for a nine-month stipend and \$8,000 for tuition, fees, and research expenses.

Morgan was chosen from a group of six applicants. The candidates were drawn from four universities in California, Michigan, and Washington. They represented the fields of structural and geotechnical engineering. The applications were reviewed by Kenneth Elwood, assistant professor of structural engineering at the University of British Columbia; Youssef Hashash, assistant professor of geotechnical engineering at the University of Illinois; and Michael Valley, a structural engineer with Magnusson Klemencic Associates in Seattle.

The focal point of Morgan's research is to apply and extend the Pacific Earthquake Engineering Research Center's (PEER) performance-based methodology to the design and evaluation of isolated structures over a broad range of performance

criteria. He intends to carry out an experimental program to validate modeling of isolated structures where nonlinear behavior is expected in the superstructure, an important consideration for nonessential isolated buildings not covered at present by the building code. This research will have application internationally with the increasing interest in seismic design for both damage resistance and the reduction of economic losses.

According to Stephen Mahin, professor of civil and environmental engineering at the University of California, Berkeley, Morgan's doctoral research could have "a major impact on the field of earthquake hazard reduction through innovative and effective use of seismic isolation and other innovative methods for response modification. The work currently underway at PEER on advancing performance-based design concepts will provide a unique foundation for Troy to establish a new framework within which to explore new applications for seismic isolation and to develop improved (and simpler) design methods that will make seismic isolation more economic and versatile."



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RESEARCH INSTITUTE  
499 14th Street, Suite 320  
Oakland, CA 94612-1934  
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