EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

NEWSLETTER

Editor Stephanie King
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 Profession

Major Earthquake Hits Peru

A major earthquake occurred near the southern coast of Peru, about 110 miles (175 km) west of Arequipa, or about 370 miles (595 km) southeast of Lima, at 4:33 pm EDT on June 23, 2001 (3:33 pm local time in Peru). A magnitude of 8.4 (revised from an earlier value) has been computed for this event. Several moderate aftershocks have been recorded, the largest having a magnitude of 6.8. At least 102 people were killed and 1,368 injured. There was extensive damage in the areas of Arequipa, Camana, Moquega, and Tacna. At press time several people were missing from a tsunami in the areas of Camana and Chalam, and at least 20 were killed. See the EERI web site at **www.eeri. org** for reconnaissance reports, photos, and maps.

News of the Institute

EERI/FEMA Graduate Fellowship Awarded

Ann Marie Kammerer, a Ph.D. candidate in civil engineering at the University of California, Berkeley, has been selected as the NEHRP Graduate Fellow in Earthquake Hazard Reduction awarded by EERI under a cooperative program funded by the Federal Emergency Management Agency. FEMA funds the award as part of the National Earthquake Hazards Reduction Program.

The fellowship is designed to foster the participation of capable individuals in working toward the goals and practice of earthquake hazard mitigation. It provides a nine-month stipend of $12,000, and $8,000 for tuition, fees, and research expenses.

Kammerer was chosen from a group of eleven applicants. Applications were reviewed by James K. Wight of the University of Michigan, Saiid Saiidi of the University of Nevada, Reno, and Jonathan Stewart of the University of California, Los Angeles. Candidates came from seven different universities in California, North Carolina, Pennsylvania, and Utah. They represented structural, civil, geotechnical, and environmental engineering.

Ann Marie Kammerer

Kammerer is currently working on quantifying the deformation potential of liquefiable soils over the entire density range. Her work will constitute the first high-quality simple-shear laboratory testing performed with two-directional shear loading (3-D) conditions. Kammerer's research will provide insight into liquefaction behavior in a more robust way than in the past and will provide data for numerical model development and calibration.

According to Associate Professor Juan M. Pestana-Nascimento of UC Berkeley, Kammerer "…has the potential for becoming one of the leaders in the field of geotechnical earthquake engineering in the very near future."

News of the Institute

More Than 400 Abstracts Accepted for 7NCEE in Boston in 2002

The Technical Committee for the Seventh U.S. National Conference on Earthquake Engineering (7NCEE) announced that almost 600 abstracts have been submitted by authors interested in presenting their work at the 2002 conference. Andrei Reinhorn, Professor in the Civil Engineering Department at the University at Buffalo (SUNY), and Adam Rose, Professor and Head of the Department of Energy, Environmental and Mineral Economics at Pennsylvania State University, are co-chairs of the Technical Committee. They report that more than 400 abstracts have been provisionally accepted. Notices informing authors of decisions on their abstracts were sent during the third week of July. Final papers will be due on October 1, 2001. If you

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News of the Profession

FEMA Reorganizes

Joe M. Allbaugh, director of the Federal Emergency Management Agency (FEMA), recently announced a realignment of functions within the agency and the establishment of the Office of National Preparedness. The realignment is effective immediately and will be fully implemented by August 25, 2001.

The agency's new functional plan provides for six directorates, including Regional Operations, which includes the agency's 10 regions. The Readiness, Response and Recovery Directorate combines preparedness, training, exercises, response, recovery, and disaster logistics.

The Federal Insurance Administration and Mitigation Directorate combines the agency's mitigation and federal insurance functions. The new External Affairs Directorate brings together the agency's externally focused offices, including congressional and intergovernmental affairs, public affairs, and international affairs.

The new Administration and Resource Planning Directorate consolidates the agency's nontechnical support functions, including resource management, financial management, and facilities management.

The Information Technology Services Directorate remains virtually unchanged, as do the U.S. Fire Administration and the offices of the Inspector General and Equal Rights. The new title for directorate heads is assistant director. The administrators of the U.S. Fire Administration and the Federal Insurance Administration will retain their titles as prescribed by law.

Allbaugh also established the Office of National Preparedness to coordinate all federal programs dealing with weapons of mass destruction consequence management, as directed by President Bush, and a new Office of Strategic Planning and Evaluation to lead the development and ongoing assessment of the agency's strategic plan.

NSF Seeks Program Director

The Civil and Mechanical Systems (CMS) Division within the Directorate for Engineering (ENG) at the National Science Foundation (NSF) announces a nationwide search for an engineering professional to fill the position of Program Director — Infrastructure and Information Systems (IIS) program.

This position will focus primarily on the Information Technology and Infrastructure Systems (ITIS) program element as described at **www.eng.nsf.gov/cms/About_CMS/IIS/iis.htm**.

The position is open until filled. While disciplinary expertise will be expected, the focus of the search is to identify a scholarly, mentoring, and open-minded person to join the present diverse and intellectually integrated team in sharing ENG's responsibilities within NSF's overall mission.

NSF Program Directors are responsible for providing stewardship of integrated research and education both in a discipline and across disciplines within the context of agency vision, mission, and goals, and within the framework of guiding legislation, agency policies, and agency resources.

A Ph.D. or equivalent professional experience, a successful research and education career in academe, industry, or government, and substantial management expertise are essential.

Program Director appointments may be on a temporary basis in the Federal Service, or by temporary assignment as a Visiting Scientist/Engineer on leave of absence from a research and/or educational institution.

Inquiries, applications, and nominations should be sent by electronic means to the CMS Division Search Coordinator: Dr. Jorn Larsen-Basse at **jlarsenb@nsf.gov**.

Additional Support for House Bill 1669

The following message from EERI member J. Brad Larsen regarding House Bill 1669 (see the June 2001 issue of the *Newsletter*, page 1) was relayed to the EERI office:

"I received a carbon copy of the letter sent by EERI to Congressional representatives last month. Another co-worker and I wrote a letter from our office to our congressman, Rep. Brian Baird, who represents southwest Washington state. I hand delivered the letter to him at one of his town meetings on May 31st, and was able to talk with him for a few minutes about the bill.

"His office called today and told me that Rep. Baird is signing on as a cosponsor of the bill. He is a member of the House Science Committee, which is one of the three committees that the bill was sent to, so it will get a good review from him in that committee."

7NCEE in Boston 2002

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have not received word about your abstract by the time you read this, please contact the EERI office.

The Technical Committee estimates that there will be 64 sessions for oral paper presentations. There will also be poster sessions. Plans for several special sessions are underway, including sessions on the 2001 Bhuj Earthquake, Seismic Fragility as a Measure of Performance, Components of Urban Earthquake Risks and their Priorities, and the Housing Encyclopedia of Construction Types in Seismically Prone Areas of the World. The committee is also developing panel discussions to reflect a range of perspectives on issues.

Be sure to mark your calendar and plan to attend the 7NCEE! The conference will be held at the Park Plaza Hotel, Boston, Massachusetts, July 21-25, 2002. The Events Committee is making arrangements for activities that will showcase Boston's rich history and culture. With 17 universities and colleges, a cluster of research companies, and some of the most respected journals in the world, Boston's culture continually advances. As the cradle of the American Revolution, the city has an unsurpassed heritage of historic landmark preservation. Don't miss the opportunity to visit these historic sites next July!

City skyline from the Boston Harbor. (Photo: Gene Lee, web site: home.inforamp.net/~genel/boston/harbour.html)

Publications

Two New Reports from EDM

The Earthquake Disaster Mitigation Center (EDM) at the Institute of Physical and Chemical Research (RIKEN) in Japan has recently released two reports. The first, "Simulation and Prediction of Earthquake Ground Motion and Structural Performance," was prepared by members of the Structural Performance Team of EDM and is available in PDF files at the web site: **www.edm.bosai.go.jp/team3/pamph3_e.html**. The second, "The Report on the Chi-Chi, Taiwan, Earthquake of September 21, 1999," is available on a CD-ROM, which includes PDF files of the document, digital video recorded from a helicopter, and HTML documents published on the EDM home page after the earthquake. For more information, see the web site: **www.miki.riken.go.jp,** or e-mail: **publications@miki.riken.go.jp**.

News of the Profession

New Southern California GPS Network

A group of earthquake scientists recently unveiled the Southern California Integrated GPS Network (SCIGN), a new type of ground-motion monitoring network. Unlike other instrument networks that record shaking, SCIGN tracks the slow motion of the Earth's plates by using the Global Positioning System (GPS).

With SCIGN, the link between the motions of the plates that make up the earth's crust and the resulting earthquakes is now being observed by an array of GPS stations operating in southern California and Baja California — two of the world's most seismically active and highly populated areas. The 250th SCIGN station was installed on July 2, 2001.

Scientists of the Southern California Earthquake Center designed and manage SCIGN. NASA's Jet Propulsion Laboratory, the Scripps Institution of Oceanography at the University of California at San Diego, and the U.S. Geological Survey (USGS) are the main participants in SCIGN. Funding for SCIGN is provided by NASA, the W. M. Keck Foundation, the National Science Foundation, and the USGS.

SCIGN provides valuable earthquake-related data to scientists, surveyors, utilities, emergency planners, government agencies, commercial photogrammetry and imagery companies, and others.

SCIGN data are freely available to anyone over the Internet (**www.scign.org**). Each month, people retrieve more than 50,000 SCIGN data files, and this number continues to increase.

Announcements

Lectures in Earthquake Engineering

During the 2001-2002 academic year, the University of Notre Dame will host the "Linbeck Distinguished Lecture Series in Earthquake Engineering: Challenges of the New Millennium." The purpose is to bring together practitioners and researchers to tackle the challenges of protecting the nation's infrastructure against seismic hazards.

The lecture series is sponsored by the University of Notre Dame's Provost's Office and Department of Civil Engineering and Geological Sciences, EERI's Friedman Family Visiting Professional Program, and an IBM Endowment. It is being organized by B. F. Spencer, Jr. and Y. C. Kurama. All of the lectures will be webcast. More information on the lecture series is available at **www.nd.edu/~linbeck**.

The lecture schedule is as follows:

September 21, 2001: "Geospatial Modeling for the Earthquake Response of Lifelines and Buildings," Thomas D. O'Rourke, Thomas R. Briggs Professor of Engineering, School of Civil and Environmental Engineering, Cornell University.

October 2, 2001: "Progress and Challenges in Performance-Based Earthquake Engineering," Helmut Krawinkler, John A. Blume Professor, Department of Civil and Environmental Engineering, Stanford University.

October 19, 2001: "Earthquake Engineering for Transportation Structures — Past, Present and Future," Joseph Penzien, Senior Principal, International Civil Engineering Consultants, Inc.; Professor Emeritus of Structural Engineering, University of California, Berkeley.

November 9, 2001: "Future Directions in Seismology for Earthquake Damage Mitigation," Hiroo Kanamori, John E. and Hazel S. Smits Professor of Geophysics, California Institute of Technology.

March 1, 2002: "A Comparison of the Response of Precast Construction During the 1994 Northridge and 1999 Turkey Earthquakes," Sharon L. Wood, Professor, Department of Civil Engineering, University of Texas, Austin.

March 22, 2002: "The Search for the Perfect Seismic Protection System," Eric Elsesser, Founding Principal, Forell/Elsesser Engineers, Inc., San Francisco.

April 4, 2002: "Consequence-Based Engineering Approaches for Reducing Earthquake Losses in Mid-America," Daniel P. Abrams, Hanson Engineers Professor of Civil and Environmental Engineering; Director, Mid-America Earthquake Center, University of Illinois at Urbana-Champaign.

Nonstructural Seismic Hazards Workshop

The U.S. Department of the Interior Seismic Safety Program will conduct a Nonstructural Seismic Hazards Training Workshop on November 27 and 28, 2001, in Portland, Oregon. The goal of the workshop is to provide training and hands-on demonstrations of cost-effective methods to identify and mitigate the seismic risk associated with nonstructural building components.

The March 2001 Nisqually earthquake near Seattle provided clear evidence of the significant overall costs associated with nonstructural failures caused by a moderate earthquake. The workshop will identify these potential risks and emphasize the economic justification to take low-cost steps to mitigate the risk.

The workshop will focus on simplified methods to identify nonstructural hazards and will present a cost-effective approach to mitigate risks through scheduled building maintenance.

The targeted audience for the workshop includes facilities, operations, and maintenance personnel as well as designers, engineers, and planners. The workshop will include a number of presentations, along with demonstrations of bracket and brace installation, and exhibits by vendors.

The workshop registration fee is $100, and all attendees will receive a complimentary, four-volume set of the Interior Seismic Safety Program Nonstructural Components Rehabilitation Guidelines.

For more information, contact Tyna Petersen, Workshop Registrar, at 303/445-2573 or at **tpetersen@do.usbr.gov**.

BOCA/ICBO 2001 Conference

The combined annual conference of Building Officials and Code Administrators International (BOCA) and the International Conference of Building Officials will be held September 16-20, 2001 in Cincinnati, Ohio. The event includes International Code Council *International Building Code* final action hearings, a trade show exposition, and professional development training for code enforcement officials and design and construction professionals. Conference seminars will address several topics, including code analysis, enforcement and administration, inspection, plan review, seismic requirements, customer service, and liability.

For more information, contact BOCA by phone: 708/799-2300 x212, or see the web site: **www.bocai.org**.

News of the Institute

EERI Housing Encyclopedia Workshop

EERI has a current project underway jointly with the International Association of Earthquake Engineering to use the world wide web to build an interactive, dynamic, web-based encyclopedia of housing construction types in seismically prone areas of the world.

The project held a workshop June 12-14, 2001, at the European School of Advanced Studies in Seismic Risk at Pavia, Italy, to discuss progress on the encyclopedia, exchange ideas on similar building construction systems, and make recommendations for improvements and additions to the encyclopedia. Thirty-six active project participants from 26 countries participated in the meeting.

The first morning was spent in describing the background and history of the project, from its inception in January 2000 as a small EERI Endowment-funded project to the enthusiastic response to the idea at the 12th World Conference on Earthquake Engineering in New Zealand, to its current status as a project with more than 150 volunteer participants from 46 countries, with funding support provided by both EERI and the Engineering Information Foundation in New York City, as well as database development and web programming donated by John A. Martin & Associates.

The workshop was organized around panel presentations on various construction types described in the encyclopedia. For each similar construction type, participants from different countries described the type, focusing on the structural system, its vulnerability or inherent strength, its performance in past earthquakes, and retrofitting approaches that have been used in the particular country.

A detailed report on the workshop, including the agenda, roster of participants, some presentations, and one-page summaries of construction systems discussed at the workshop will soon be available on the project web site, which is linked to EERI's home page, **www.eeri.org**.

The workshop also allowed time for discussion of the encyclopedia, the current forms that participants complete for each construction type, suggestions for revisions, and future directions. Several major recommendations emerged and are detailed in the following paragraphs:

The strength of the encyclopedia will depend on the number of entries. It is now critical to bring in more contributions from developed countries such as Australia, Canada, Japan, New Zealand, and the United States as well as other countries with a high level of seismic risk, including China, Egypt, Indonesia, Mexico, and the Philippines. A major initiative this fall will focus on motivating participants from these countries and recruiting additional participants. Those interested can contact either project chair Svetlana Brzev at **sbrzev@bcit.ca** or Marjorie Greene of EERI at **mgreene@eeri.org**.

The form needs to include explicit information on the seismic strengths of the construction type as well as its vulnerability. This would provide an opportunity to highlight positive seismic features of some traditional construction types known for their good seismic performance.

The measurement of seismic vulnerability needs to be carefully assessed. The participants concluded that the seismic vulnerability rating currently used in the project (as recommended by the 1998 European Macroseismic Scale) is subjective, and is intended to give only a general estimation of the seismic vulnerability of the building type. It should not be used as a basis for statistical loss estimation or for evaluation of an individual building without additional information.

Promotion of the encyclopedia and dissemination of its information will be critical to its success. John Harding of the UN's ISDR (International Secretariat for Disaster Reduction) made a presentation at the workshop and indicated ISDR's willingness to support promotion of the encyclopedia and discuss options for printing and dissemination.

It will be helpful to develop technical commentaries for the most common and most vulnerable building types. The commentaries should include discussions on seismic response and failure mechanisms, seismic features, and recommendations for generic retrofit solutions emerging from contributions to the encyclopedia from various countries.

- PLEASE POST -

EERI ANNUAL STUDENT PAPER COMPETITION

The Earthquake Engineering Research Institute is pleased to announce its Annual Student Paper Competition. The purpose of the competition is to promote active involvement of students in earthquake engineering and the earthquake hazards research community.

The general rules of the contest are as follows:

Graduate Category

1. The paper must be an original contribution in a discipline directly related to earthquake engineering or earthquake hazard reduction.
2. The paper is not to exceed 12 pages in length inclusive of all tables and figures.
3. The paper must represent the original work of the student and be authored by the student alone. A faculty member or other advisor may not co-author the paper.

Undergraduate Category

1. The paper must be directly related to earthquake engineering or earthquake hazard reduction.
2. The paper is not to exceed 12 pages in length inclusive of all tables and figures.
3. The paper must be authored by the student alone. In addition, a faculty member or other advisor is required to oversee the preparation of the manuscript. The advisor can provide feedback before submission of the paper but may not co-author the paper. The advisor's name should be included in an "Acknowledgments" section of the paper.

Guidelines for preparing the manuscript can be obtained from the EERI web site (**www.eeri.org**) or from: EERI, 499 14th Street, Suite 320, Oakland, CA 94612, phone 510/451-0905, fax 510/451-5411. All papers must be received by November 5, 2001, at the EERI office.

Up to four student authors will be invited to the Annual Meeting of EERI in Long Beach, California, February 6-9, 2002, and will receive travel support for this purpose. Their papers will also be considered for publication in *Earthquake Spectra*. The top paper in the graduate category will be presented at the Annual Meeting.

** DEADLINE November 5, 2001 **

CALENDAR

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

2001

AUGUST

6-10. International Conf. on Disaster Management, Orlando, FL. Info: **www.disastermeeting.com** (7/01)

7-10. International Tsunami Symposium, Seattle, WA. Info: **www.pmel.noaa.gov/its2001** (7/00)

12-17. SMiRT Conference, Washington, DC. Info: **www.engr.ncsu.edu/SMIRT_16** (7/00)

16-19. International Conference on Engineering Materials, San Jose, CA. Info: **mcmullin@email.sjsu.edu** (3/00)

27-30. Disaster Recovery for Sustainability, Boulder, CO. Info: **jacque.monday@colorado.edu** (6/01)

29-31. IABSE Conference on Wooden Structures, Lahti, Finland. Info: **www.iabse.ethz.ch** (8/00)

SEPTEMBER

4-6. ERES 2001, Malaga, Spain. Info: **www.wessex.ac.uk/conferences/2001/eres01/** (11/00)

12. Steel Connection Seminar, Seattle, WA. See page 8. (8/01)

13. Steel Connection Seminar, Portland, OR. See page 8. (8/01)

16-19. Disaster Recovery Symposium, Orlando, FL. Info: **www.drj.com** (7/01)

16-20. BOCA/ICBO Annual Conference. See page 4. (8/01)

24. Steel Connection Seminar, Buena Park, CA. See page 8. (8/01)

25. Steel Connection Seminar, Burbank, CA. See page 8. (8/01)

26. Steel Connection Seminar, South San Francisco, CA. See page 8. (8/01)

26-29. SEAOC Annual Convention, San Diego, CA. Info: 619/521-8500. (5/01)

27. Steel Connection Seminar, Concord, CA. See page 8. (8/01)

OCTOBER

2-5. International Seismic Seminar, Assisi, Italy. Info: **192.107.65.2/glis** (5/01)

3-5. Modelling and Simulation in Civil Engineering, Paris, France. Info: **www.enpc.fr/caquot/** (9/00)

7-10. SDEE'2001, Philadelphia, PA. Info: **www.drexel.edu/sdee2001** (9/00)

7-11. Seismic Systems for Concrete Structures, Rome, Italy. Info: **www.ega.it/jbss5_2001** (5/01)

21-24. WSSPC Annual Meeting, Sacramento, CA. Info: **www.wsspc.org** (5/01)

27-28. Nonstructural Seismic Hazards Workshop, Portland, OR. See page 4. (8/01)

DECEMBER

9-11. CTBUH International Conference, London, UK. Info: **www.ctbuh.org** (4/01)

2002

FEBRUARY

6-9. 2002 EERI Annual Meeting, Long Beach, CA.

MARCH

17-21. Smart Structures and Materials, San Diego, CA. Info: **www.spie.org/info/ss** (7/01)

APRIL

7-12. World Conference on Structural Control, Como, Italy. Info: **congress@icil64.cilea.it** (7/01)

28-May 1. Seismic Conference on Highways and Bridges, Portland, OR. Info: **mceer@acsu.buffalo.edu** (7/01)

JUNE

10-12. 3rd International Conference on Composites in Infrastructure, San Francisco, CA. Info: **www.az-icci.org** (3/01)

JULY

21-25. 7th National Conference on Earthquake Engineering, Boston, MA. Info: **www.eeri.org. See page 1.** (9/99, 8/01)

SEPTEMBER

2-5. eurodyn 2002, Munich, Germany. See page 7. (8/01)

9-13. 12th European Conf. on Earthquake Engineering, London, UK. Info: **12ECEE@ice.org.uk** (9/00,12/00)

OCTOBER

9-12. Structural Engineers World Congress, Yokohama, Japan. Info: **sewc2002.gr.jp** (6/01)

Call for Abstracts

European Structural Dynamics Conference

The Fifth European Conference on Structural Dynamics (eurodyn 2002) will be held in Munich, Germany, September 2-5, 2002. The aim of the conference is to promote the development of new methods in structural dynamics, analytical and numerical methods, measurement techniques, and computer simulations. The deadline for submission of abstracts is August 15, 2001. For more information, see the web site: **www. eurodyn2002.de**.

News of the Institute

New Ethical Dilemmas Posted

Two new ethical dilemmas have been posted as part of EERI's Ethical Dilemmas in Earthquake Risk Reduction web series. Both case studies involve issues associated with post-earthquake response and recovery. In the first scenario, "Post-Earthquake Evaluation Requests," XYZ Engineering must choose between several response priorities when a moderate earthquake hits Metroville.

In the second scenario, "Applying for Earthquake Recovery Assistance," ABC Engineers is asked to revise a post-earthquake safety evaluation of a moderately damaged building so that the owner can apply for government recovery aid for demolition of the building.

To read the dilemmas and participate in the discussion by voting for possible courses of action, log onto **www.eeri.org**. In addition, be sure to review the summary of reader responses from the previous case, "Probable Loss Estimation."

If you are interested in submitting an idea for a dilemma to be discussed on the web, please write **ethics@eeri.org**. Facts are kept confidential; each case is described in generic terms.

Announcements

Steel Seminars

The Steel Structures Technology Center (SSTC) will be conducting one-day seminars on "Steel Connections: Seismic Applications." The seminars will initially be conducted in six West Coast cities, and will be of interest to structural and civil engineers, steel fabricators and erectors, testing agencies, inspectors, building officials, and others involved in steel building construction.

The seminar will focus on the design and details of welded and bolted connections classified as prequalified under the recently published FEMA 350 report. Included will be the specifications, welding, bolting, quality control, and quality assurance provisions of the FEMA 353 report.

Seminars have been scheduled in the following cities: September 12 in Seattle, WA; September 13 in Portland, OR; September 24 in Buena Park, CA; September 25 in Burbank, CA; September 26 in South San Francisco, CA; and September 27 in Concord, CA. Each seminar will include 6½ hours of lectures and discussion. For more information, contact the SSTC by phone: 248/893-0132, or see the web site: **www.steelstructures. com**.

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