



**EARTHQUAKE ENGINEERING
RESEARCH INSTITUTE**

NEWSLETTER

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**EARTHQUAKE ENGINEERING
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News of the Institute

Sozen Presents the 2002 Distinguished Lecture on "A Way of Thinking"

Mete A. Sozen, Kettelhut Distinguished Professor of Structural Engineering at Purdue University, presented the 2002 Distinguished Lecture in February at the EERI Annual Meeting in Long Beach, California. His lecture was entitled "A Way of Thinking." Sozen was motivated in selecting his topic by the fact that at the present time, "ready access to versatile and powerful software enables the engineer to do more and think less," which in his opinion makes it especially important to reflect thoughtfully on the role of analysis in design.

Sozen observed that a way of thinking about structural design was gradually developed in the mid-20th century by three engineers. It was not their purpose to do so, but Sozen stated that "when their contributions are viewed together, a complete way of thinking about structural design becomes discernible." The basis of Sozen's talk is that engineers would gain valuable perspective by reviewing the works of Harald M. Westergaard, Hardy Cross, and Nathan M. Newmark for the general principles of their art of thinking.

According to Sozen, Westergaard's vision of the relationship between theory and design is captured by his statement "...a simple device can yield perhaps 80 percent of the truth whereas the next 10 percent would be difficult to obtain and the last 10 percent impossible..." Cross summarized the role of analysis in design in writing, "All analyses are based on some assumptions which are not quite in accordance with the facts. From this, however, it does not follow that the conclusions of the analysis are not very close to the facts."

Newmark, who worked with Professors Cross (the artist) and Westergaard (the analyst) as a graduate student in 1930s at Urbana, Illinois, went on to expand and deepen their ways of thinking about the relationship of structural mechanics to design. When structural mechanics was applied, "it had to be applied with judicious care to maximize return in relation to investment." The pinnacles of Newmark's achievements were in simplifying geotechnical and structural design.

From 1957 through 1992, Sozen served on the structural engineering faculty at the University of Illinois, Urbana, where he had obtained his M.S. and Ph.D. degrees. He has focused on the behavior of reinforced concrete structures subjected to static and dynamic loads. He has worked on many projects for government agencies and industry as an engineering consultant.

Sozen has been granted honorary doctorates from Bogazici University in Turkey, where he obtained his undergraduate degree, and from Johann Pannonius University in Hungary. He is an honorary member of the Association of Turkish Scientists and Engineers, the American Society of Civil Engineers, and the American Concrete Institute. He has been elected to membership in the U.S. National Academy of Engineering and the Royal Swedish Academy of Engineering Sciences.

Sozen has held his current post at Purdue since 1993. EERI extends warmest appreciation to him for his gracious donation of his Distinguished Lecture honorarium to initiate a student chapter of EERI at Purdue. Look for his lecture to appear in a future issue of *Earthquake Spectra*.

News of the Institute

Wilfred D. Iwan Receives Alquist Award

At EERI's Annual Meeting in Long Beach in February, the California Earthquake Safety Foundation awarded EERI member Wilfred (Bill) D. Iwan the 2002 Alfred E. Alquist Medal for Outstanding Achievement in Earthquake Safety. The citation accompanying the award stated that Iwan's innovations cover the field of seismic engineering and the application of its theoretical components to life safety in structural design. These efforts and his extensive volunteer services have contributed significantly to the seismic safety of California and its citizens. His career has spanned the military, business, and academia, including 38 years at the California Institute of Technology.

Iwan's research achievements include the development of methods to represent complex nonlinear structures with simpler linear systems, the development of practical methods for earthquake-resistant design, and the development of simplified methods for the analysis of seismic isolation systems for critical equipment. In 1979 he proposed an earthquake early-warning system for urban regions.

His work has made a difference to all earthquake-prone areas of the world. In 1978 he organized an international workshop that led to the worldwide deployment of strong-motion earthquake measurement arrays, resulting eventually in a greatly expanded database of earthquake motion for use in research and earthquake-resistant design. In 1980 he led a team that introduced modern strong-motion earthquake recording instrumentation to China, resulting in the first instrumentally based seismic zoning in that country. During his 13 years on the California Seismic Safety Commission, he served as chair twice, including the challenging period following the 1994 Northridge



Wilfred (Bill) D. Iwan

earthquake. During his tenure the Commission became a recognized leader in seismic safety advocacy, with publications and programs that were used throughout the world.

Iwan was also a leader in the creation of the California Universities for Research in Earthquake Engineering (CUREe), and he has mentored more than 30 doctoral students who are now in leadership positions in business and educational institutions worldwide.

Iwan was also awarded the Newmark Medal of the American Society of Civil Engineers, and has been elected to the U.S. National Academy of Engineering.

The California Earthquake Safety Foundation is a nonprofit corporation established to raise the level of public awareness and commitment to earthquake safety in California. Once a year, the Foundation presents the Alfred E. Alquist Medal to recognize outstanding achievements in earthquake safety in California.

News of the Institute

Ethics and International Activities Committees

The Institute's Board of Directors has formally approved the creation of a new **Ethics Committee**, chaired by Peter Somers of Skilling Ward Magnusson Barkshire, Inc., Seattle. For several years Somers has guided the development of EERI's web site page "Case Studies in Ethical Dilemmas in Earthquake Risk Reduction." All interested EERI members are encouraged to participate in this committee. If you would like to serve, please contact Somers at pws@skilling.com.

EERI Board member Sergio Alcocer of the National Center for Disaster Prevention, Mexico, is spearheading an effort to expand the Institute's **International Activities Committee** to better meet the needs of international members. The following are core members of the committee: Marc Badoux, Switzerland; Patricio Bonelli, Chile; Craig Comartin, USA; Francisco Crisafulli, Argentina; Polat Gulkan, Turkey; Ricardo Guzman, USA; Juan Diego Jaramillo, Colombia; James Jirsa, USA; and Masayoshi Nakashima, Japan.

Last Chance to Renew and Be Included in the 2002 Roster

All address changes and renewals must be received in the EERI office by April 30, 2002, to ensure that they will be included in the 2002 *Membership Roster*. You may renew with a Visa or MasterCard on EERI's web site (www.eeri.org), by fax (510/541-5411), or e-mail (eeeri@eeeri.org). Look for the 2002 *Roster* in your mail in June or July.

News of the Institute

2001 Shah Family Innovation Prize Recipient

Selecting from a large field of strong candidates, the Shah Family Innovation Prize Selection Committee awarded the 2001 prize to Stephanie E. Chang, a research assistant professor at the University of Washington, and formerly an engineering economist with ABS Consulting. Chang's career reflects the innovative spirit honored by the prize. Not only does she work in both the academic and professional worlds, and the U.S. and international contexts, but she also spans the engineering and social science communities. Her unique combination of skills and background has allowed her to play important roles in (1) understanding the need to quantify indirect losses from earthquakes, and (2) recognizing that addressing complex socio-economic issues requires a comprehensive and multidisciplinary approach.

Endowed by a generous gift from the Haresh Shah family, the \$10,000 Shah Family Innovation Prize is awarded annually to younger professionals and academics for creativity, innovation, and entrepreneurial spirit in the field of earthquake risk mitigation and management. The prize recognizes and honors individuals who have been involved in the development of cutting-edge, innovative solutions to problems in earthquake engineering and related disciplines.

Recipients should be in the developing or expanding stage of their careers, with the promise of important contributions ahead. Past prize recipients were Bret Lizundia, structural engineer, Rutherford and Chekene, San Francisco; Nicos Makris, professor, Department of Civil Engineering, University of California, Berkeley; and Durgesh Rai, professor, Indian Institute of Technology, Kanpur, India.



Stephanie Chang

The 2001 Selection Committee was composed of Robert D. Hanson (chair), University of Michigan; William T. Holmes, Rutherford & Chekene, San Francisco; Wilfred D. Iwan, California Institute of Technology, Pasadena; Peter J. May, University of Washington, Seattle; and Pratap Shirke, Pan-Gulf Group, Ltd., London

News of the Profession

Online Ethics Center

The web site of the Online Ethics Center for Engineering and Science is located at onlineethics.org/about.html. With funding from the National Science Foundation, the Ethics Center aims to provide engineers, scientists, and science and engineering students with resources useful for understanding and addressing ethically significant problems that arise in their work life.

The center is also intended to serve teachers of engineering and science students who want to include discussion of ethical problems closely related to technical subjects as a part of science and engineering courses, or in freestanding subjects in professional or research ethics.

The Online Ethics Center web site offers an ethics help line, a glossary, a guide to research on ethics, case studies, and hypermedia cases of, for example, exemplary behavior and problem scenarios.

Announcements

Second International ROSE School Seminar

The Second Annual Seminar of the European School of Advanced Studies in Reduction of Seismic Risk (ROSE) will be held June 7-8, 2002, in Pavia, Italy. The ROSE School was established in 2000 to offer a high-level educational environment in earthquake engineering to top-level graduate students from all over the world. The teaching system is based on short courses, offered in series by a highly qualified international faculty. As a part of the program, an international seminar is organized every year to present and discuss the best dissertations of the students in an advanced stage of development. The Second International ROSE Seminar is establishing the tradition of a forum for discussing some of the more controversial current issues in earthquake engineering.

In addition to the scientific board members and to the ROSE School students, a maximum of 50 participants will be accepted. Those who wish to attend the seminar may contact the ROSE School Secretariat, Collegio Alessandro Volta, Via Ferrata, 27100, Pavia, Italy; tel: +39 0382 548735; fax: +39 0382 528422; e-mail: rose@unipv.it; web-site: spadino.unipv.it/rose.html.

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**.

2002

APRIL

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

21-26 EGS Meeting, Nice, France. Info: www.copernicus.org/EGS/EGS.html (1/02)

24-26. 8th Chilean Conference on Earthquake Engineering, Valparaiso, Chile. Info: www.achisina2002.utfsm.cl (10/01)

26. LA Tall Buildings Council Annual Meeting, Los Angeles, CA. Info: gbrandow@bjase.com (12/01)

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

MAY

2. SMIP02 Seminar for Utilization of Strong-Motion Data, Los Angeles, CA. Info: www.conservation.ca.gov/dmg/csmip (4/02)

10-11. Clough and Penzien Symposium, Berkeley, CA. Info: www.curee.org (1/02)

16-18. Earth Science and Engineering Symposium, Istanbul, Turkey. Info: www.earth.itu.edu.tr (1/02)

30-31. ATC-17-2 Seminar, Los Angeles, CA. Info: www.atcouncil.org (12/01)

JUNE

7-8. Second Annual ROSE Seminar, Pavia, Italy. See page 5. (4/02)

10-12. 3rd International Conference on Composites in Infrastructure, San

Francisco, CA. Info: www.az-icci.org (3/01)

19-21. Risk Analysis 2002, Sintra, Portugal. Info: www.wessex.ac.uk/conferences/2002/risk02 (9/01)

JULY

21-25. 7th National Conference on Earthquake Engineering, Boston, MA. Info: www.eeri.org. See page 4. (8/01, 9/01, 10/01, 11/01, 1/02, 2/02, 3/02)

AUGUST

15-20. ANCER Annual Meeting, Harbin and Hong Kong, China. See page 2. (4/02)

SEPTEMBER

2-5. eurodyn 2002, Munich, Germany. Info: www.eurodyn2002.de (8/01)

8-11. Dam Safety 2002, Tampa, FL. Info: www.damsafety.org (2/02)

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

26-28. SEAOC Annual Meeting, Santa Barbara, CA. Info: MLCSE@aol.com (1/02)

OCTOBER

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

17-18. OECD-NEA Workshop, Istanbul, Turkey. See page 8. (4/02)

23-26. Earthquake Loss Estimation and Risk Reduction, Bucharest, Romania. Info: lungud@cons.incerc.ro (3/02)

2003

FEBRUARY

5-8. EERI Annual Meeting, Portland Marriott Downtown, OR. (3/02)

13-15. Pacific Conf. on Earthquake Engineering, Christchurch, NZ. Info: www.nzsee.org.nz/pcee (1/02)

Publications

Toolbox for Global Disaster Reduction

The "Toolbox for Global Disaster Reduction" is the first product of the Global Alliance for Disaster Reduction, a network of over 1,000 cooperating professionals and organizations distributed throughout the world.

Since 2000, members of the Alliance have embarked on a unique endeavor to collaborate in building technical and political capacity for solving local, national, regional, and global problems caused by natural and technological hazards.

The alpha edition of the Toolbox is available on CD-ROM. It contains the names, bios, ideas, information, and the essence of personal experiences of members of the Alliance, all of whom in various ways are championing the goal of effective transfer of knowledge, experience, and technology to other professionals throughout the world.

The Toolbox includes the elements of strategic and implementation plans on four themes ("Living with," "Building to Withstand," "Learning from," and "Implementation") and 42 technical topics under the four themes, which are being developed for implementation as "Global Blueprints for Change." It includes PowerPoint files, which can be adapted and tailored for use in all regions of the world, and the reports produced by participants in the International Workshop on Disaster Reduction, which was convened in Reston, Virginia, in August 2001.

The alpha CD of the Toolbox for Global Disaster Reduction can be ordered from Walter Hays, tel: 703 255-2458; e-mail: walter_hays@msn.com. The cost is US\$100, which includes airmail delivery.