CUREe

CUREe News

Spring 1997

In this issue:

CUREe is a California nonprofit corporation dedicated to the advancement of earthquake engineering. CUREe's member institutions are:

Caltech, Stanford, Berkeley, Davis, Irvine, Los Angeles, San Diego, USC

The President's Corner

Helmut Krawinkler

I have to disappoint you if you expect Steve Mahin's articulate writing in this corner of our newsletter. Sorry, but every good thing comes to an end, even Steve's term as CUREe President. At the last CUREe Board Meeting a new slate of officers was elected, and you'll have to put up with me as president, but only for one year. At this turn of events it is my prerogative to reminisce about the past and to pay tribute to those who have made the last few years a great success for CUREe.

CUREe has grown steadily over the years, primarily because of the tireless efforts of its past presidents - the last one being Steve Mahin who took over the steering wheel three years ago. During Steve's tenure the CUREe-Kajima relationship has continued to flourish, providing funding for many California university researchers through Phase 2 and, since October 1996, through Phase 3 of the CUREe-Kajima project. Since late 1994 much additional funding has been made available through the FEMA-sponsored SAC steel program, which addresses the problems associated with fractures in steel moment frames with welded connections. CUREe is a partner in the SAC Joint Venture. The steel program is a national effort and involves many engineers and researchers, nationwide, but much of the funding allocated to topical investigations and testing goes to Californian university researchers.

I venture to say that SAC would not have gotten off the ground were it not for Steve Mahin. It was at Steve's initiative that a group of engineers and researchers met on June 28, 1994, to lay the groundwork for SAC, and it was Steve who has led the SAC effort from the beginning and has provided the leadership that has brought SAC much exposure and success. For this and all his other tireless efforts on behalf of CUREe we owe Steve our highest respect and many thanks. Many thanks go also to the retiring members of the Executive Committee, Haresh Shah (Past President), Geoffrey Martin (Vice President), and Anne Kiremidjian (Acting Secretary), and to the retiring members of the Board of Directors, Anne Kiremidjian and Robert Thacker. They all have devoted much time to CUREe and are responsible for having expanded its activities and improved its standing in the earthquake community. Last but not least, many thanks and much appreciation is due to CUREe's staff. Our Executive Director, Bob Reitherman, together with Parshaw Vaziri and Wanda Realegeño, has done a superb job in managing the day by day activities of the organization and in being pro-active whenever the situation called for it. CUREe is lucky to have such an excellent staff.

A great success for CUREe was its ability to foster cooperation between California's universities to the extent that made it possible to create the Pacific Earthquake Engineering Research (PEER) Center. The concept and organization of this Center are the outcome of many deliberations of a CUREe-appointed committee of university representatives from the eight CUREe member institutions, subsequently including the University of Washington. PEER represents these nine universities, as well as other affiliated universities, in the NSF competition for earthquake research centers. It deserves our wholehearted support and best wishes for success.

I expect that the future will bring continuation of past successes and much new

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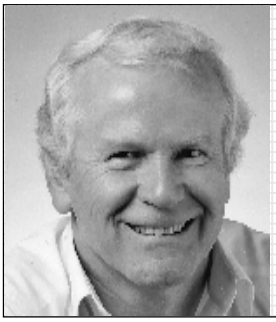
New CUREe Officers Selected

At its January 30, 1997 meeting at U.C. Berkeley, the CUREe Board of Directors selected new officers. The new officers, shown below, replace these outgoing officers: Stephen Mahin, President; Geoffrey Martin, Vice-President; Anne Kiremidjian, Secretary (Acting); Helmut Krawinkler, Treasurer; Haresh Shah, Past President. Professors Mahin and Krawinkler continue as officers in new capacities as Past President and President, respectively. CUREe would like to thank the outgoing officers; their efforts have made CUREe's progress possible.

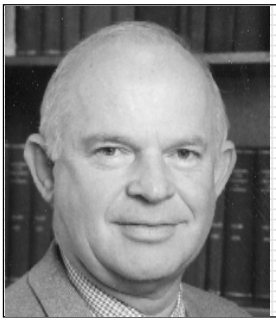


President **Helmut Krawinkler**

Helmut Krawinkler is the John A. Blume Professor of Engineering in the Department of Civil Engineering at Stanford University. He received his engineering diploma from the Technical University Vienna, Austria in 1964, his M.S. from the California State University San Jose in 1967, and his Ph.D. from the University of California at Berkeley in 1971. In 1973 he joined the faculty at Stanford. His research is in the areas of structural design and earthquake engineering. He has served on the boards of ATC, SEAONC, and CUREe. For the last three years his duties included the position as CUREe's Treasurer. His involvement in ATC-33 (FEMA 273), ATC-34, ATC-35, and SAC, together with extensive consulting engineering activities, provide him with excellent opportunities to communicate research to engineering practice and to minimize his involvement in unproductive activities such as sleeping.

Vice-President **James L. Beck**

James Beck is Professor of Applied Mechanics and Civil Engineering, and Executive Officer for these departments, at Caltech. Jim has broad research interests in earthquake engineering and structural dynamics, and he currently supervises seven doctoral students in these areas. He is in his second term as an At-Large Director of the CUREe Board. Jim has participated in all three phases of the CUREe-Kajima Research Program and is currently a member of the Phase III Project Team with the responsibility to propose a two-year research program on Innovative Methods and Technologies for Earthquake Recovery and Reconstruction. This program is still in the planning stages and Jim welcomes input from CUREe members on this topic. His email address is: jimbeck@cco.caltech.edu. He also wishes to remind CUREe members that their Board welcomes new ideas from the membership for possible projects which are appropriate to CUREe's mission.

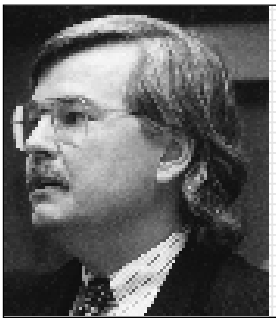


Secretary **James C. Anderson**

Jim Anderson is Professor of Civil Engineering and Co-Director of the Center for Research in Earthquake Engineering at the University of Southern California. He obtained B.S.E. and M.S.E. degrees in Civil Engineering from the University of Michigan and a Ph.D. degree from the University of California at Berkeley. He teaches undergraduate and graduate courses in structural dynamics and structural design. His research interests include the nonlinear response of structures to earthquakes and correlation with measured response, earthquake resistant design and testing the cyclic behavior of large-scale structural components in steel and reinforced concrete. He is currently supervising four doctoral students. Prior to joining USC in 1974 he worked for the General Dynamics Corporation and for Sargent & Lundy Engineers.

Treasurer **Chia-Ming Uang**

Chia-Ming Uang is Associate Professor of Structural Engineering at the University of California, San Diego. He obtained a B.S. degree from National Taiwan University and a Ph.D. degree from the University of California at Berkeley. His research interests include experimental and analytical studies of steel structures for seismic design of buildings and bridges. Recently he has been working on the fracture issues of steel moment frame connections for earthquake resistance. Professor Uang has been a member of the CUREe Board of Directors since 1994.



Past President **Stephen A. Mahin**

Stephen Mahin is the Byron and Elvira Nishkian Professor of Structural Engineering in the Department of Civil Engineering at the University of California at Berkeley. He received his B.S. and Ph.D. degrees from the University of California at Berkeley. Currently, Professor Mahin is teaching undergraduate and graduate courses in structural design and earthquake engineering. He is also Program Manager for Phase 2 of the FEMA-sponsored SAC Program to Reduce the Earthquake Hazards of Steel Moment Frame Structures, a joint venture between the Structural Engineers Association of California, the Applied Technology Council, and CUREe. Professor Mahin was CUREe President from 1994-1996, and has served on the CUREe Board of Directors since 1989.

Shah Symposium

On April 25-26, 1997, Stanford University's Department of Civil Engineering will host a symposium and banquet to honor the retirement of Professor Haresh C. Shah and the rededication of the seismically-reconstructed John A. Blume Earthquake Engineering Center. The symposium, co-sponsored by CUREe, is titled "*Risk Management and Mitigation for Natural Hazards*" and will feature a series of state-of-the-art lectures on catastrophe risk management and methods for mitigating the risks associated with natural hazards.

The symposium Organizing Committee are: Thalia Anagnos, Roger Borcherdt, Ronaldo Borja, Gregory Chiu, Craig Comartin, Weimin Dong, James Gere (Chair), Stephanie King, Anne Kiremidjian, Helmut Krawinkler, Kincho Law, Stephen Mahin, Martin McCann, Peter Pinsky, Chris Poland, Christopher Rojahn, Allison Smith, Susan Stone, and Carol Strovers (Coordinator).

The program will open with a welcoming reception on the evening of Thursday, April 24; the retirement banquet will be held on Friday night. Symposium sessions begin on the Stanford campus Friday morning, April 25, and continue until noon Saturday, April 26. There will be a tour and open house of the Blume Center after lunch on Saturday.

A special symposium preregistration rate of $90 ($30 for students) is available until April 4. After then, registration for the symposium is $115 ($45 for students). Tickets to the retirement banquet are available separately for $50 per person.

For more information, please contact:

Shah Symposium
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Stanford, CA 94305-4020, USA

Tel: 415-725-9072
Fax: 415-725-9755
e-mail: ShahSymp@ce.Stanford.edu

CUREe Organizing National Conference on Northridge Earthquake Research

CUREe is organizing a conference, funded by NSF with perhaps other federal sponsors, to present a comprehensive review of the research conducted on the 1994 Northridge Earthquake. The conference will be held August 20 through 22 at the Wyndham Hotel at Los Angeles International Airport. The deadline for submission of abstracts is May 2, 1997 , and papers are due June 3. The *Proceedings* will contain short (8-page maximum) papers that will span the full range of earth sciences, engineering, and social science and emergency management. In addition to papers summarizing research that been conducted, papers on the topic of the implementation of Northridge research are also solicited. Contact CUREe for further information on abstract sumittals and information on the conference.

Multiple papers by the same authors are allowed as long as the papers are on different topics.

This 1997 conference and its *Proceedings* will complete the FEMA-funded effort CUREe undertook in 1994 to hold a conference as researchers were beginning their work.

SAC Steel Project

The SAC Steel Project is now in its multi-year Phase 2. A variety of technical investigations are underway or planned to begin soon, as described in the February, 1997 issue (No. 2) of the ***SAC Update*** and the ***SAC Project Summary.*** Professor Stephen Mahin, who recently stepped down as CUREe President, is the Project Manager for the SAC Joint Venture whose partners are SEAOC (Structural Engineers Association of California), ATC (Applied Technology Council), and CUREe. If you have not received copies of the ***Update*** and ***Summary***, call the SAC Technical Office at (510) 231-9477, or e-mail via sacsteel@eerc.berkeley.edu. An extensive amount of information is also directly accessible through the project's web site:

EERC-CUREe Symposium in Honor of Vitelmo V. Bertero

A symposium in a series co-sponsored by California Universities for Research in Earthquake Engineering honoring lifelong contributions to the understanding of earthquakes.

The EERC-CUREe Symposium in Honor of Vitelmo V. Bertero was held in Berkeley from January 31-February 1, 1997. The Symposium attracted over 250 attendees from the U.S. and the world, and was centered around recent developments in four topical areas pioneered by Professor Bertero: Reinforced Concrete Structures, Structural Steel, Design Methodologies, and Lessons from Earthquakes. Experts from the U.S. and abroad served as session chairs and speakers (see photo below).

The organzing committee for the Symposium consisted of four of Professor Bertero's former students (three of whom are members of CUREe's Executive Committee): James Anderson, Helmut Krawinkler, Stephen Mahin, and Andrew Whittaker (Chair). In addition to their hard work, the effort of the Earthquake Engineering Research Center (EERC) and CUREe staff helped make the Symposium a success.

CUREe-Sponsored Students

(from left to right): Kazuhiko Morishita (UCB), Xiaojing Duan (USC), Vitelmo Bertero, Hussain Bhatia (UCI), Akshay Gupta (Stanford), Steve Chou (UCSD). **Not Pictured:** Matt Skokan (UCLA), Ann Sardo (UCD)

Photo Credit: Barbara Mauk

In an effort to increase student involvement, each CUREe member institution was allocated a 'mini-scholarship' from CUREe to send one student to the Symposium, as is being done for the Shah Symposium (see page 3). A photo of the CUREe-sponsored students with Professor Bertero is shown in the inset.

Registrants of the Symposium will receive the final proceedings, which will be published as an EERC Report, shortly; others may order it by contacting EERC at:

Tel: 510-231-9468
Fax: 510-231-9471

Session Chairs and Speakers

(Front Row, from left to right): William Holmes, Egor Popov, Eduardo Miranda, Vitelmo Bertero, Hiroyuki Aoyama, Amador Teran-Gilmore, Makoto Watabe, Richard Klingner, Boris Bresler, Tsuneo Okada, Roberto Meli. **(Back Row, from left to right):** Jack Moehle, James Jirsa, Maryann Phipps, Robert Park, Ronald Hamburger, Helmut Krawinkler, Andrew Whittaker, Filip Filippou, Chia-Ming Uang, Charles Roeder, James Anderson, Pedro Hidalgo. **Not pictured:** Hiroshi Akiyama, Bruce Bolt, Ray Clough, Stephen Mahin, Joseph Penzien, Mete Sozen.

Photo Credit: Barbara Mauk

U.S. Panel on Structural Control Research

While structural control is considered a relatively new field, CUREe has been in the forefront of promoting structural control research since 1990 when CUREe was awarded a continuous grant from NSF for management of the U.S. Panel on Structural Control Research. Professors George Housner and Sami Masri, the project's Principal Investigators, were the driving force behind the effort to launch, and later, maintain the Panel. With support from NSF (Project Officer: Dr. Shi-Chi Liu), the Panel has been active in promoting structural control research in the United States and abroad by coordinating interaction between persons interested in research and applications of structural control.

The motivation for establishing the Panel was two-fold: (1) increase awareness of the potential of active protective systems for hazard mitigation under arbitrary dynamic loads; and (2) the need for organized national and cooperative multi-national collaborative efforts. The Panel's objectives include facilitating the transmission of information related to state-of-the-art developments, identifying and prioritizing research and development needs, developing preliminary plans for analytical and experimental advancement (including performance of full-scale testing and demonstration), and collaborating with international organizations.

Through various auxiliary grants from NSF, the Panel has coordinated several efforts to promote structural control, such as the First World Conference on Structural Control (1WCSC), which was held in August 1994 in Pasadena, CA, and was attended by 337 participants from 15 countries. A total of 235 technical papers were presented in four parallel sessions. The 1WCSC was not only the first international conference on this subject, but it also helped establish structural control as a true engineering discipline. The Panel is also participating in the planning of the Second World Conference on Structural Control, to be held in 1998 in Kyoto, Japan.

The Panel has helped organize other conferences/workshops, such as the "U.S.-Italy-Japan Workshop on Structural Control and Intelligent Systems," held in Sorrento, Italy in July 1992 (just prior to the 10WCEE). A more recent workshop was the "Joint U.S.-Japan Workshop on the Mitigation of Urban Disasters: Cooperative Research on Structural Control," which was held on March 14-15, 1996 in Kyoto. Professors Housner and Masri serve as the PI's for these projects as well.

Other Panel accomplishments include:

- Assisting in the establishment of IASC
- Distribution of the IASC Newsletter
- Participation in the planning of the First European Conf. on Structural Control
- Participation in the planning of the Second International Workshop on Structural Control
- Participation in the planning structural control sessions at the Eleventh World Conference on Earthquake Engineering

Further information about the U.S. Panel activities and the latest developments in the field of Structural Control may be obtained from the Panel home page at: **http://cwis.usc.edu/dept/civil_eng/structural/welcome.html**

For more information, please contact:

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SEAOC Call for Papers

The Structural Engineers Association of California has issued a call for papers for its September 25-27, 1997 Annual Convention in San Diego. For information on submission of abstracts on the Convention theme of "Practical Based Design," contact Craig Rush, R2H Engineering:

Tel: 619-673-8416
Fax: 619-673-8418.

President's Corner

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excitement for CUREe. SAC and the CUREe-Kajima project will continue for at least two more years. A several million dollar CUREe proposal for a FEMA funded multi-institutional project on "Earthquake Hazard Mitigation of Wood Frame Construction" is under review by the California Office of Emergency Services, with a decision due very soon. Other opportunities may arise for funded research from various sources, including State and Federal agencies and international organizations. CUREe is planning to continue and expand its educational activities, which include sponsorship of, and student support for, major events such as the recently held Housner and Bertero Symposia, and the upcoming Shah Symposium.

CUREe has a new Executive Committee (President Helmut Krawinkler, Vice President Jim Beck, Treasurer Chia-Ming Uang, Secretary Jim Anderson, and Past President Steve Mahin) and two new board members, Jim Anderson and Donald Libby. Congratulations are also in order for Jim Beck, who was recently re-elected to a two-year term as an At-Large Director. We all are looking forward to an exciting year and to further growth of CUREe. The main obligations of the Board and the Executive Committee are to serve the CUREe membership and to contribute to earthquake hazard mitigation. But we can fulfill our obligations only if you let us know what you want us to do and how we can do it better. Please communicate your wishes, ideas, and thoughts to us. Our e-mail addresses are listed in this newsletter.

SEAOC Seismology Committee

Professor Gerard Pardoen of UC Irvine represents CUREe as an observer on the SEAOC Seismology ("Blue Book") Committee. CUREe members with thoughts related to the Uniform Building Code's seismic provisions should contact Prof. Pardoen at 714-824-7094 (tel); 714-824-2117 (fax), or e-mail via gpardoen@uci.edu.

The intent of SEAOC's recent inclusion of CUREe in its Seismology Committee deliberations is to maintain a direct connection with the latest engineering research being carried out in California.

Two members of CUREe's Board of Directors are nominated by SEAOC. Currently, these two members are Gregg Brandow and Donald Libby.

UJLPE Report Now Available

The U.S.-Japan Loma Prieta Earthquake project (UJLPE) final report is now available. The title of the report is *Investigations of Thirty-Three Loma Prieta Earthquake Strong Motion Recording Sites*, by C.C. Thiel, Jr. and J.F. Schneider.

The project was sponsored by the Building Contractors Society of Japan and the Electrical Power Research Institute. The CUREe Oversight Committee for this project was: I.M. Idriss, Haresh Shah (Chair), and Robin Shepherd.

The 500+ page report includes boring records from 33 sites, as well as a two volume diskette set with geophysical data for selected strong motion recording sites. The cost of the report is $300.

For ordering information, please contact the CUREe office.

Publications

The **1997 CUREe Calendar** can be ordered for $11.50.

Seismic Events

CUREe Board of Directors mtgs.
April 24, 1997 - Stanford
July 25, 1997 - UC Irvine
November 7, 1997 - UCLA

Shah Symposium at Stanford Univ.
April 25-26, 1997
Stanford, CA

New CUREe Members

The following individuals were approved as new members of CUREe at the January 30, 1997 Board of Directors' meeting:

Stephen Glaser - UCB
Jonathan Stewart - UCLA

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MARCH 27, 1997