



**EARTHQUAKE ENGINEERING  
RESEARCH INSTITUTE**

**NEWSLETTER**

|                     |                             |
|---------------------|-----------------------------|
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## News of the Institute

### O'Rourke to Lecture in New Dinner Speaker Series

EERI Member Tom O'Rourke, Professor of Civil and Environmental Engineering at Cornell University, will present the first lecture in EERI's new Dinner Speaker Series. O'Rourke will speak on March 20 in St. Louis on "Recent Advances in Zonation for Seismic Hazards and Liquefaction." He will provide an overview of earthquake hazards, lifeline systems, and lifeline performance during earthquakes, and will explore the use of geospatial data management and analysis in lifeline systems studies.

The EERI Dinner Speaker Series is a new program initiated for regional chapters by the Board of Directors in the fall of 2000. For more information, contact EERI.

## News of the Institute

### Clarence Allen Receives Housner Medal

Clarence R. Allen, Professor Emeritus of Geology and Geophysics at the California Institute of Technology, was this year's recipient of EERI's highest honor, the George W. Housner Medal. The medal was awarded for his pre-eminent achievements in advancing the understanding of earthquakes and faulting, and for his many outstanding contributions to evaluating earthquake hazards for dams and other major facilities. Allen has effectively bridged the geophysical, geological, and engineering communities.

After obtaining his Ph.D. in structural geology and geophysics from Caltech in 1954, he taught briefly at the University of Minnesota, and then returned to Caltech for the remainder of his professional career.

Allen has been devoted to research and teaching. His primary interests are in the relationship between faults and earthquakes, the geophysics and structure of glaciers, seismic hazard assessment, and the tectonics of regional fault systems, all of which he has studied all over the world. He helped bring the seismotectonics of China to the attention of the West.

His global experience enabled Allen to write the influential paper "Geologic Criteria for Evaluating Seismicity" in 1975. This work laid the foundation for incorporating geologic information into the analysis of seismic hazards.

Allen has been active on many committees of the National Academy of Sciences and on several consulting boards for the state of California and the federal government. His consulting work on the safety of major dams, nuclear power plants, and other critical facilities has taken him to twenty different countries on every continent except Antarctica. He has played a key role in incorporating seismology into the process of assessing techniques for storing radioactive waste.



*Clarence Allen*

In 1995 he was EERI's Distinguished Lecturer. His topic was "Earthquake Hazard Assessment: Has Our Approach Been Modified in Light of Recent Earthquakes?" He contended that although the probabilistic approach to earthquake hazard assessment is imperfect, it represents the only realistic hope for "societal efforts to be concentrated and prioritized in a quantitative, scientifically defensible, and socially equitable manner."

Allen has received many honors for his contributions to earthquake research and seismic hazard assessment. He is one of the few individuals to be elected to both the National Academy of Sciences and the National Academy of Engineering. He was also elected to the American Academy of Arts and Sciences.

He has received the Medal of the Seismological Society of America, the first G. K. Gilbert Award in Seismic Geology from the Carnegie Institute of Washington, and the Alfred E. Alquist Award from the California Earthquake Safety Foundation.

In addition, he has served as president of the Geological Society of America and the Seismological Society of America.



## National Earthquake Hazards Reduction Program

### News from the NEES Program: New Equipment Awards; Solicitation; Name Change

The National Science Foundation (NSF) recently made eight new Network for Earthquake Engineering Simulation (NEES) equipment awards, bringing the total number of equipment awards (including the first three made last fall) to eleven at 10 institutions, for a total of \$45 million.

This completes the NSF 00-6, NEES competition: Earthquake Engineering Research Equipment, Phase 1. NSF plans to issue a program solicitation for Phase 2 during 2001.

The awards are part of the George E. Brown, Jr. Network for Earthquake Engineering Simulation. NEES is a "collaboratory" designed to improve the seismic design and performance of the U.S. civil and mechanical infrastructure.

NSF plans to spend up to a total of \$81.9 million by 2004 under NEES to enhance earthquake engineering research in the United States and to build a high-performance Internet network to connect the equipment facilities.

The current equipment awards, totaling \$45 million over four years, will fund construction, expansion, and modernization of equipment at 10 universities that will include capabilities for remote observation and oper-

ation. The equipment includes new and upgraded shake tables, centrifuges, a tsunami wave basin, large-scale laboratory experimentation systems, and field experimentation and monitoring installations. All equipment is expected to be operational by late 2004.

The NEES Equipment Awards are as follows:

**Oregon State University:** \$4.78 million, Principal Investigator: Solomon Yim, *Upgrading Oregon State's Multidirectional Wave Basin for Remote Tsunami Research.*

**Rensselaer Polytechnic Institute,** New York: \$2.38 million, Principal Investigator: Ricardo Dobry, *Upgrading, Development, and Integration of Next Generation Earthquake Engineering Experimental Capability at Rensselaer's 100 g-ton Geotechnical Centrifuge.*

**State University of New York at Buffalo:** \$6.16 million, Principal Investigator: Michel Bruneau, *Versatile High-Performance Shake Tables Facility Towards Real-Time Hybrid Seismic Testing.*

**State University of New York at Buffalo:** \$4.38 million, Principal Investigator: Michel Bruneau, *Large-Scale High-Performance Testing Facility Towards Real-Time Hybrid Seismic Testing.*

**University of California at Berkeley:** \$4.27 million, Principal Investigator: Jack Moehle, *Reconfigurable Reaction-Wall-Based Earthquake Simulator Facility.*

**University of California at Davis:** 4.61 million, Principal Investigator: Bruce Kutter, *A NEES Geotechnical Centrifuge Facility.*

**University of California at Los Angeles:** \$2.65 million, Principal Investigator: John Wallace, *Field Testing and Monitoring of Structural Performance.*

**University of Colorado at Boulder:** \$1.98 million, Principal Investigator: Benson Shing, *Fast Hybrid Test Platform for the Seismic Performance*

*Evaluation of Structural Systems.*

**University of Minnesota:** \$6.47 million, Principal Investigator: Catherine French, *A System for Multi-Axial Subassembly Testing.*

**University of Nevada at Reno:** \$4.40 million, Principal Investigator: Ian Buckle, *Development of a Biaxial Multiple Shake Table Research Facility.*

**University of Texas at Austin:** \$2.94 million, Principal Investigator: Kenneth Stokoe II, *Large-Scale Mobile Shakers and Associated Instrumentation for Dynamic Field Studies of Geotechnical and Structural Systems.*

A six-month scoping study already underway is defining user requirements, hardware and software technologies, and support infrastructure needed for the network. The University of Illinois at Urbana-Champaign leads the scoping team. (See page 2 of the October 2000 *Newsletter*.)

Eventually, a community-led consortium will be selected to manage and operate NEES for at least 10 years. The Program Solicitation NSF 01-56, "George E. Brown, Jr. Network for Earthquake Engineering Simulation: Consortium Development" is currently available on the NSF web site at: [www.nsf.gov/cgi-bin/getpub?nsf0156](http://www.nsf.gov/cgi-bin/getpub?nsf0156). The letter of intent deadline is May 4, 2001 (letters of intent are optional) and the proposal deadline is June 4, 2001.

The NEES program was renamed in November 2000 by Congress to honor the late George E. Brown, Jr., former chairman of the House Science Committee and a champion of engineering and science in Congress for over 30 years.

Further information on the equipment awards and NEES is available on the NSF home page at [www.eng.nsf.gov/nees](http://www.eng.nsf.gov/nees). Inquiries can also be sent to Joy Pauschke ([jpauschk@nsf.gov](mailto:jpauschk@nsf.gov)), NEES Program Director, or Thomas L. Anderson ([tanderso@nsf.gov](mailto:tanderso@nsf.gov)), NEES Project Coordinator for all the equipment awards.

## News of the Profession

### Joe Allbaugh Confirmed as FEMA Director

Joe Allbaugh, President George W. Bush's choice to head FEMA, was unanimously confirmed by the U.S. Senate on February 15. As FEMA Director, Allbaugh will coordinate federal disaster relief on behalf of President Bush, including the response and recovery activities of 28 federal agencies and departments, the American Red Cross, and other voluntary agencies. He also will oversee the National Flood Insurance Program, the U.S. Fire Administration, and other proactive mitigation activities, such as Project Impact: Building Disaster-Resistant Communities, that reduce loss of life and property from all types of hazards.

Prior to joining FEMA, Allbaugh served as the national campaign manager for Bush-Cheney 2000, Inc., with responsibility for overseeing all activities related to the Bush election campaign. Before the campaign, Allbaugh served as Chief of Staff to then-Governor Bush and had worked with FEMA on nine presidential disaster declarations in Texas.

## Publications

### Seismicity of Central America

*The Seismicity of Central America: A Descriptive Catalogue 1898-1995* is a new book by EERI Honorary Member N.N. Ambraseys and R.D. Adams.

The book is the outcome of a careful and detailed study of earthquakes in Central America. It combines information from felt earthquakes and instrumental recordings to reassess the location and size of events since the beginning of the instrumental era. Early sections describe the techniques used, with particular emphasis on the determination of earthquake magnitude. The largest section comprises

## News of the Institute

### Durgesh Rai Receives Shah Family Innovation Award

EERI is pleased to announce that the second Shah Family Innovation Prize was awarded at the Annual Meeting in Monterey. The \$10,000 prize recipient was Professor Durgesh C. Rai of the University of Roorkee, India. The prize honors individuals under 35 years of age who have demonstrated at early stages in their careers the potential to make major contributions to the field of earthquake risk mitigation and management.



**Durgesh C. Rai**

Rai represents creativity and innovation in academia. With a Ph.D. from the University of Michigan, he has wide-ranging involvement in earthquake engineering. He has developed innovative retrofit schemes for elevated water tanks, and pioneered the use of an aluminum beam as a shear-link, acting as an energy dissipation device. He developed a design guide for special truss moment frames. He has been actively involved in many projects following the 1997 Jabalpur and 1999 Chamoli earthquakes. He has demonstrated public entrepreneurship through participation in the development of codes and in continuing education programs for design professionals, focussing on the importance of improving standards to reduce future risk. He will be an active participant in the Indian earthquake engineering community, learning from the recent devastating Bhuj earthquake and translating these lessons into improved practice. He has received two prestigious national awards in India, given in recognition of creativity, innovation, and future potential: the Young Scientist Award of 1998 and the Young Engineer Award of 1999, both given by the Department of Science and Technology of the Government of India.

The Shah Family Innovation Prize was created with a gift to the EERI Endowment Fund by the Hareesh Shah family. The Selection Committee is chaired by Robert D. Hanson, University of Michigan/FEMA. Committee members include William T. Holmes, Rutherford and Chekene; Wilfred D. Iwan, California Institute of Technology; Peter J. May, University of Washington; and Pratap Shirke, Pan-Gulf Group, Ltd.

Nominations for next year's prize will be accepted until October 15, 2001. A brochure describing the nomination process and selection criteria is available from EERI or on the web site at [www.eeri.org/Committees/Honors/SHAH.html](http://www.eeri.org/Committees/Honors/SHAH.html).

detailed descriptions of more than 700 of the more significant earthquakes, many accompanied by maps of the felt effects. The main catalogue gives details of the location and size of more than 1800 events, with references to associated phenomena such as surface faulting, volcanism, and tsunami generation.

The 250-page book is published by Im-

perial College Press and distributed by World Scientific Publishing. It is available for \$68 with special prices available for those in developing countries and some Eastern European countries. For orders and more information, contact: World Scientific Publishing, 1060 Main Street, River Edge, NJ 07661; phone: 800/227-7562; fax: 888/977-2665; e-mail: [sales@wspc.com](mailto:sales@wspc.com); web site: [www.worldscientific.com](http://www.worldscientific.com).

## News of the Institute

# Summary Minutes of the December 8, 2000 Meeting of the Board of Directors

**Preliminaries:** President Chris Arnold called the meeting to order at 8:57 a.m. Present were President-elect Chris Poland, Secretary/Treasurer Ron Mayes, Directors Norman Abrahamson, Thalia Anagnos, Mel Green, Dennis Mileti, Paul Somerville, and Thomas O'Rourke. Also present were Executive Director Susan Tubbesing and Administrative Assistant Beth Nelson.

President Arnold noted that this meeting would depart from the customary format by employing a consent agenda for a number of items traditionally discussed as part of the formal agenda, to ensure time for discussion of a draft Strategic Plan during the second half of the day.

**Secretary/Treasurer's Report:** The 6th International Conference on Seismic Zonation exceeded expectations financially due to high on-site registration.

Mayes reported that the rent in the building that EERI occupies is likely to double when the existing lease is renewed in May 2001. The staff has explored other options and sees few alternatives. Mayes endorsed renewing the lease in the current location for three years, while he and Tubbesing explore alternatives for the future.

Mayes reviewed the Report of Revenue and Expenses as of October 31, 2000. The combined balance sheet as of October 31, 2000, shows the Institute's opening fund balance of \$1,013,026 increased by excess revenue over expenses of \$83,395. EERI's total liabilities balance of \$228,584, combined with the total fund balance, equaled \$1,324,946.

The Endowment Program's opening fund balance of \$799,621 decreased

by \$68,108 for a balance of \$731,513. The Endowment Program's total liabilities of \$159,279, combined with the total fund balance, equaled \$890,791. All programs combined, including association, technical and endowment, totaled \$1,324,946.

The Investment Funds Report showed \$61,728 in the General Administrative Short-Term Fund, \$205,032 in the General Administrative Long-Term Fund, and \$732,512 in the Endowment Fund. The Innovation Prize Investment Fund totaled \$158,778. The Institute's interest-bearing checking account showed a balance of \$60,539.

The combined invested funds in both General Administrative Funds totaled \$266,761. The Grants Status Summary showed that of \$976,120 in active grants, \$597,569 had been expended as of October 31, 2000.

### Endowment Report:

**Visiting Professional Program:** Arnold reported that the Visiting Professional Program is running well. The program is very popular, and the project committee is currently seeking outside funding to sustain the program.

**Housing Encyclopedia:** Arnold reported that this project has been extremely successful. International participation has been strong. A 21-page questionnaire was developed and the project was advertised at the 12<sup>th</sup> World Conference on Earthquake Engineering meeting in Auckland in February 2000. The committee has received more than 30 completed questionnaires, with others pending from a wide range of countries. The project has a web site, and Farzad Naeim is working on the development of a web-based system that will be highly interactive.

The Board approved a request from the Endowment Committee and allocated \$5,000 to continue the PARMA Project with the Public Agency Risk Managers Association and \$35,000 for the Housing Project next year.

### Honors Committee Report:

**Housner Nominees:** The Board voted to select Clarence Allen for the Housner Medal.

**Honorary Members:** Poland moved to accept all recommendations of the Honors Committee. The recommendations included honorary membership for Nicholas M. Ambraseys and Robert D. Hanson, Eduardo Reinoso and Mario Ordaz for the Outstanding Paper Award, and Honors Committee membership for Loring Wyllie. The motion was seconded and passed unanimously.

### Publications Policy Committee Report:

**Electronic Publishing:** O'Rourke reported that there was continuing evaluation of electronic publishing. It was agreed that it would be appropriate to invite Roger Borchardt to an Executive Committee meeting focused on the future of EERI publications. The proposal will be brought to the Board by midyear, and a decision will be made no later than fall 2001.

### Earthquake Spectra Editorial Board

**Members:** O'Rourke reported that there were five members retiring. These members include R. Dobry, C. Kircher, J. Nicoletti, K. Tierney, and L. Youd. Nominated and approved by the Board as replacements were D. Abrams, G. Deierlein, G. Fenves, R. Hamburger, and K. Stokoe.

It was agreed that O'Rourke would relay to Borchardt the Board's desire to diversify the Editorial Board, and that Borchardt in turn needs to relay the responsibility of soliciting papers to the Editorial Board. Also, the Board feels the need to pay special attention to the social science field.

**COSMOS Request:** Abrahamson reported COSMOS has requested \$5,000 from EERI to support the strong-motion database that they are developing. A motion was passed approving EERI as an institutional member of COSMOS, with a contribution of \$5,000 and an announcement to be placed in the *Newsletter* describing COSMOS and its goals.

## International Association of Earthquake Engineering (IAEE)

**Membership Dues Proposal:** Arnold reported that IAEE membership dues are being instituted to support the administrative office of IAEE. The Board agreed that EERI would be willing to contribute its fair share of dues, up to \$4,000 a year, but also would encourage IAEE to begin assessing a small percentage of revenues from successful world conferences as a source of revenue to support its activities.

After discussion of items on the consent agenda, the remainder of the day was spent in discussion of the new Strategic Plan, "The Future of EERI."

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## Publications

### SCEC Phase III Report Available from SSA

In December 2000, the Seismological Society of America (SSA) issued a special supplement of its *Bulletin* on the theme of "Accounting for Site Effects in Probabilistic Seismic Hazard Analyses of Southern California" (Volume 90, Number 6, Part B). This supplement presents research from the Southern California Earthquake Center's (SCEC) Phase III project. It can be ordered for \$25 (plus sales tax in California) from SSA at 201 Plaza Professional Building, El Cerrito, CA 94530-4003, phone 510/525-5474, fax 510/525-7204.

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## Announcements

### ICCI Conference in June 2002

The Third International Conference on Composites in Infrastructure (ICCI '02) will be held in San Francisco, California, June 10-12, 2002. Information on the conference may be obtained on the Web at: [www.az-icci.org](http://www.az-icci.org) or by calling Engineering Professional Development at (520) 621-5104.

## News of the Institute

### Newly Endowed Friedman Family Visiting Professional Program

EERI is honored to announce that David A. Friedman and Paulette J. Meyer, along with other members of the Friedman family, including Phyllis K. Friedman, Robert E. Friedman, and Eleanor F. Friedman, have generously endowed the Visiting Professional Program with a gift of \$250,000. This leadership gift to the Endowment Fund will support EERI in sending practicing engineers to colleges and universities for short, intense visits of three or four days, combining lectures and informal visits with students and faculty.

The Friedman family has a tradition of supporting visiting professionals in academia, having also endowed the Howard A. Friedman Visiting Professional program in the Department of Architecture, College of Environmental Design, at the University of California, Berkeley.

The Friedman family has a history of social activism and philanthropic support of nonprofit organizations in the areas of economic development, homelessness, and housing. They have recently established the Faultline Foundation, which will focus on the dynamics and inequities of the economic system and on the fragility of the built environment.

This restricted endowment provides needed structure and support to expand what is already a popular EERI program. A steering committee will be created to develop basic guidelines for the program, and it is anticipated that up to ten professionals will be able to visit academic institutions each year. Emphasis will be placed on increasing the number of universities that participate, and on encouraging collaboration between host departments of engineering and architecture.

This is the second major gift to the EERI Endowment Fund, which is used to support special projects and activities benefitting earthquake engineering. In 1997, the Hareh Shah family generously contributed \$250,000 to endow a \$10,000 annual prize for young professionals or academics, focussed on creativity, innovation, and entrepreneurial spirit.

Both of these gifts underscore the importance of mentoring the next generation of earthquake engineers and architects.

*EERI will soon have guidelines available for the Friedman Family Visiting Professional Program. Contact the EERI office for more information.*

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## Obituary

### Walter D. Saunders, 1923-2000

EERI recently learned that Walter D. Saunders, an Institute member since 1975, passed away on October 31, 2000. He had worked for Brandow & Johnston and John A. Martin & Associates after obtaining his degree in civil engineering from USC in 1950. He then formed the partnership of Martin & Saunders, which later became W. D. Saunders & Associates. He was a past president of ATC and SEAOSC. He sold his business in 1992 but retained his EERI membership. He is survived by Alice, his wife of 53 years, two sons, a daughter, and four grandchildren.

## News of the Institute

### Treasurer's Report – Fiscal Year 2000

The data to the right, taken from EERI's audited financial statement, summarize EERI's financial status as of December 31, 2000. In 2000, EERI's revenues were \$28,000 above expenses, primarily due to the success of the Sixth International Conference on Seismic Zonation and overhead generated by the activity from the Federal Emergency Management Agency (FEMA) and National Science Foundation (NSF) grants.

We are pleased to announce that the Board authorized a transfer of \$100,000 from EERI's general fund to the Endowment Fund, which will enable the Endowment to reach the \$1,000,000 level.

Membership is slightly down from 1999. There are 95 new members resulting from the joint membership program with the Seismological Society of America (SSA). SSA members who choose this limited category receive Newsletters, the Membership Roster, and discounts on publications and conferences. The Board has set a goal of reaching the 3,000-member level in five years. Annual Subscribing Membership dues were doubled from \$1,000 to \$2,000; it is gratifying to note that apparently the increase has not had a significant effect on the number of Subscribing Members.

A look at the direct and indirect benefits of membership shows that members receive \$376 in value in exchange for their annual dues of \$165. Analysis of revenues and expenses reveals that in 2000, dues were only about a third of revenues, an indication of the importance of FEMA and NSF in supporting EERI's mission.

The conservative 2001 budget reflects a deficit of \$20,000, primarily because the rental rate for EERI's office space will nearly double this year. In spite of that, EERI remains in solid financial health.

Ronald L. Mayes  
EERI Secretary/Treasurer

### 2000 Summary of Revenues and Expenses

#### Revenues (\$1,000s)

|                                   |                |
|-----------------------------------|----------------|
| Meetings                          | \$256          |
| Publications                      | 78             |
| Membership and Spectra Dues       | 416            |
| Endowment Programs                | 131            |
| Grants                            | 526            |
| Interest and Other Income (G & A) | 9              |
| <b>TOTAL REVENUES</b>             | <b>\$1,416</b> |

#### Expenses (\$1,000s)

|                                 |                |
|---------------------------------|----------------|
| Meetings and Technical Seminars | \$402          |
| Publications                    | 99             |
| Journal                         | 166            |
| Membership                      | 94             |
| Endowment Programs              | 124            |
| Support Programs                | 15             |
| Association Expenses            | 135            |
| Grants                          | 353            |
| <b>TOTAL EXPENSES</b>           | <b>\$1,388</b> |

**REVENUES OVER EXPENSES                      \$28**

### 2000 Benefits of Membership

|                        | 2000 Expenses    | Per Member   |
|------------------------|------------------|--------------|
| General Administration | \$134,641        | \$52         |
| Member Services        | 94,110           | 37           |
| 2000 Annual Meeting    | 47,583           | 18           |
| Newsletter             | 58,119           | 23           |
| Journal (2678 members) | 166,126          | 62           |
| Support Programs       | 15,274           | 6            |
| <b>TOTAL</b>           | <b>\$515,853</b> | <b>\$198</b> |

### 2000 Indirect Benefits of Membership

|                         |                  |              |
|-------------------------|------------------|--------------|
| FEMA                    | \$258,115        | \$100        |
| Learning from EQs (NSF) | 76,847           | 30           |
| Endowment               | 124,414          | 48           |
| <b>TOTAL</b>            | <b>\$459,376</b> | <b>\$178</b> |



## 2000 Membership Report

| <u>Individual Members</u>    | 2000         | 1999         |
|------------------------------|--------------|--------------|
| Regular Members              | 1,944        | 2,050        |
| Student Members              | 318          | 336          |
| Retired Members              | 64           | 61           |
| Honorary Members             | 19           | 17           |
| Affiliate Members            | 56           | 51           |
| SSA                          | 95           |              |
| SUBTOTAL                     | 2,496        | 2,515        |
| <br>                         |              |              |
| <u>Institutional Members</u> |              |              |
| Subscribing Members          | 48           | 50           |
| Institutional Members        | 33           | 37           |
| SUBTOTAL                     | 81           | 87           |
| <b>TOTAL MEMBERSHIP</b>      | <b>2,577</b> | <b>2,602</b> |

## 2001 Budget for Revenues and Expenses

### Revenues (\$1,000s)

|                                   |         |
|-----------------------------------|---------|
| Meetings                          | \$134   |
| Publications                      | 64      |
| Membership and Spectra Dues       | 504     |
| Endowment Programs                | 113     |
| Contributions                     | 3       |
| Grants                            | 600     |
| Interest and Other Income (G & A) | 5       |
| TOTAL REVENUES                    | \$1,423 |

### Expenses (\$1,000s)

|                                 |              |
|---------------------------------|--------------|
| Meetings and Technical Seminars | \$178        |
| Publications                    | 164          |
| Journal                         | 143          |
| Membership                      | 99           |
| Endowment Programs              | 113          |
| Support Programs                | 17           |
| Association Expenses            | 173          |
| Grants                          | 556          |
| TOTAL EXPENSES                  | \$1,443      |
| <b>REVENUES OVER EXPENSES</b>   | <b>\$-20</b> |

## News of the Institute

### EERI Responds to Bhuj Earthquake of January 26

EERI dispatched a team of scientists and engineers to study the impacts of the 7.7 Bhuj earthquake that devastated the State of Gujarat, India, on January 26.

Funded by the National Science Foundation as part of EERI's Learning from Earthquakes Program, EERI's joint India/US team was led by structural engineering Professor Sudhir Jain of the India Institute of Technology (IIT), Kanpur, and geologist William Lettis of William Lettis & Associates, Walnut Creek, California.

Team members spent about ten days in the field investigating the impacts of the earthquake on the built environment including lifelines and port facilities, emergency response, shelter, and interim housing. The team began their investigation in the city of Ahmedabad, and then moved to the more severely damaged epicentral areas.

Preliminary reports and photos from the field have been posted on the EERI web site at [www.eeri.org](http://www.eeri.org). The team will write a reconnaissance report insert for an upcoming *Newsletter*, and will present a series of briefings, which will be announced by EERI.

The EERI Reconnaissance Team members included Sudhir K. Jain; William R. Lettis; Donald Ballantyne, EQE International; Umesh Dayal, IIT, Kanpur; Rakesh Goel, Cal Poly San Luis Obispo; James Hengesh, URS Corporation; Praveen Malhotra, Factory Mutual Research Corp.; Challa G.V. Murty, IIT, Kanpur; Chandan K. Saikia, URS Corporation; Mahendra Pal Singh, Virginia Tech; Krishna Vatsa, George Washington Univ.; Jaswant Arlekar, IIT, Kanpur; S.K. Chaube, IIT, Kanpur; Alok Goyal, IIT, Bombay; and P.L. Narula, formerly of the Geological Survey of India.

## News of the Institute

### 2001 Annual Meeting Highlights

EERI extends kudos to the organizing committee for doing an excellent job of planning EERI's 53<sup>rd</sup> Annual Meeting, held last month in Monterey, California, on the theme of "Dealing with Issues of Acceptable Risk." The committee consisted of Mary Comerio (chair), Chris Arnold, Nesrin Basoz, Bruce Bolt, Greg Deierlein, Charlie Eadie, Jon Heintz, Bret Lizundia, Joe Maffei, Shirley Mattingly, Kurt McMullin, Chris Poland, Maury Power, Evan Reis, and Guna Selvaduray. Special thanks go to Kinematics, Inc., KPFF Consulting Engineers, and MTS Systems Corporation for their generous contributions in helping to sponsor the Annual Meeting. Their support helped to ensure its success.

Many positive comments were heard about the quality of the technical program. The meeting's theme is a reflection of the expanded vision defined in the new **Strategic Plan** developed by the Board (see page 5 of the February 2001 *Newsletter*).

A high point of the week was the unforgettable performance of "Acceptable Risk: The Parallel Program" by the post-banquet entertainers, comprised of the Probability Curves (Catherine Bauman, Janiele Maffei, Sarah Nathe, Kathleen Tierney, and Kent Yu), Mort Gagewraite (Loring Wyllie), the Random Variables (Craig Comartin and Maffei), Norm L. Fault (Bruce Bolt), Peril Bailey (Catherine Bau-

man), Yul Regretit (Laurence Kornfield), Sig Span (Mark Yashinsky), the Orthogonal Modes (Linda Bourque, Marjorie Greene, and Jack Moehle), and Prof. Reëntrant Körner (Chris Arnold). The entire stunning production was moderated by Bill Holmes in the guises of Mason Reewall, Cat Bonds, and Khan Tilever.

Two of the awards given at the Annual Meeting have been covered in this *Newsletter*. Future issues will cover Honorary Members, the Distinguished Lecturer, the Outstanding Paper, the Student Paper Award recipients, and the Alquist Award.



Loring Wyllie, Mike Mahoney, and Tim Sheckler enjoy the Icebreaker reception. (photo: Tubbesing)



David Brunson discusses his poster. (photo: Tubbesing)



D. Tao (MCEER Info Service) discusses her EQNET poster with M. Celebi. (photo: Goralski/MCEER)



Mary Comerio, Chris Poland and Simon Wilkie debate about the "Capacity to Define Acceptable Risk." (photo: King)



EERI Pres. C. Poland with D. L. Garcia (Student Paper winner), and P. Grossi (Graduate Fellow). (photo: Goralski/MCEER)



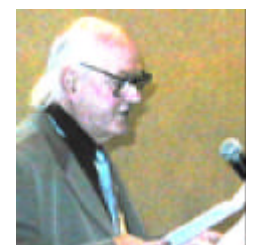
Guna Selvaduray and Charles Scawthorn mingle at the Subscribing Members' reception. (photo: Tubbesing)



After the banquet, the Probability Curves sing "When You're At Risk" in the show "Acceptable Risk: The Parallel Program." (photo: King)



The Orthogonal Modes perform after the banquet. (photo: King)



Chris Arnold as Prof. Reëntrant Körner. (photo: King)



**PLEASE POST IMMEDIATELY**



**EARTHQUAKE ENGINEERING RESEARCH INSTITUTE**

**2001-2002 EERI/FEMA  
GRADUATE FELLOWSHIP IN  
EARTHQUAKE HAZARD REDUCTION**

EERI is pleased to announce the availability of a Graduate Fellowship for the 2001-2002 academic year to support one full-time student in a discipline contributing to the science and practice of earthquake hazard mitigation.

The one-year fellowship, underwritten with funds provided by the Federal Emergency Management Agency, is designed to foster the participation of capable individuals in working toward goals and activities of the National Earthquake Hazards Reduction Program.

**AWARD**

The EERI/FEMA fellowship provides a nine-month stipend of \$12,000 with an additional \$8,000 for tuition, fees and research expenses.

**CRITERIA**

Applicants must be enrolled in a graduate degree program at an accredited U.S. college or university and must hold U.S. citizenship or permanent resident status. All applications must include an academic transcript and a statement of educational and career goals.

Applications shall be submitted by a faculty sponsor at the host institution, together with a letter of nomination. Two additional reference letters should be submitted directly to EERI. They should evaluate the applicant's recent academic performance and the candidate's potential to contribute to the field.

**TO APPLY**

Candidates may obtain application forms from their college or university departments, from EERI's web site (<http://www.eeri.org>), or upon request from:

Earthquake Engineering Research Institute  
499 14th Street, Suite 320  
Oakland, California 94612-1934  
(510) 451-0905 fax: (510) 451-5411 e-mail: [eeeri@eeeri.org](mailto:eeeri@eeeri.org)

**Deadline for receipt of all application materials at EERI is MAY 14, 2001.  
Announcement of the award will be made on JUNE 15, 2001.**

## News of the Profession

### Interactive Web Site on Inelastic Seismic Analysis Procedures

The Applied Technology Council (ATC) has established an interactive web site for the exchange of ideas and information to evaluate and improve inelastic seismic analysis procedures that are used with performance-based engineering methods for seismic design, evaluation, and rehabilitation of buildings.

The web site has been created as part of the FEMA-funded ATC-55 Project, a recently commenced study to improve inelastic seismic analysis procedures. The impetus for the ATC-55 Project has arisen because of the emerging use of nonlinear static analysis procedures specified in recently developed documents, such as ATC-40, *Seismic Evaluation and Retrofit of Concrete Buildings*, which details the Capacity Spectrum Method, and FEMA 273, *Guidelines for the Seismic Rehabilitation of Buildings*, which documents a procedure known as the Coefficient Method.

The ATC-55 Project has been created to provide a practical and effective way to resolve differences, incorporate new knowledge, and build consensus and guidance for the improvement of these procedures as applied to both existing and new structures. The project will also include a national workshop to present and resolve major issues and identify research needs.

The ATC-55 web site contains a project profile, summaries of initially identified issues, forms for providing research and state-of-the-practice data, a project work plan and schedule, and instructions on how external "Contributors" can provide review and comment. The ATC-55 web site can be accessed through the home page of ATC's web site, [www.atccouncil.org](http://www.atccouncil.org).

## Announcements

### Los Angeles Tall Buildings Structural Design Council Annual Meeting

The Los Angeles Tall Buildings Structural Design Council is requesting abstracts for papers for the 2001 Annual Meeting that will be held on May 4, 2001.

The meeting topics include challenges in tall buildings in wind and seismic regions; improvements and innovations in seismic design of tall buildings; performance-based design; lessons learned in tall building design and performance from recent earthquakes; trends in tall building research; research and performance of connection details; and guidelines for tall buildings in Los Angeles.

For more information on the meeting contact: Los Angeles Tall Buildings Structural Design Council, 1660 W. Third Street, Los Angeles, CA 90017; phone: 213/484-8950; fax: 213/483-5550; e-mail: [bjase@bjase.com](mailto:bjase@bjase.com).

## News of the Profession

### Second Strong Earthquake in El Salvador

An earthquake of magnitude 6.6 hit El Salvador on February 13, one month after a magnitude 7.6 earthquake killed at least 840 people and left thousands homeless in this small country in Central America. The February 13 event was centered about 15 miles southeast of the capital city San Salvador. Preliminary reports estimate more than 400 deaths, 3150 injuries, and 45,000 destroyed homes due to the earthquake.

Most of the damage was located in provinces east of San Salvador, in Cuscatlan, La Paz, and San Vicente. Hundreds of people are still missing from the January 13 event, which destroyed more than 278,000 homes, many in massive landslides.

Photos and preliminary reports from both El Salvador earthquakes can be seen on the EERI web site at [www.eeri.org](http://www.eeri.org). Look for a reconnaissance report insert in an upcoming issue of the *Newsletter*.

## Publications

### Earthquake Shaking in the Los Angeles Basin

In conjunction with the seventh anniversary of the 1994 magnitude 6.7 Northridge earthquake, the U.S. Geological Survey, in cooperation with the Southern California Earthquake Center and the National Science Foundation, has produced a two-page fact sheet that explains how geologic conditions in the Los Angeles basin affect the amount of shaking experienced by various areas of the basin.

The fact sheet is the result of a five-year study by USGS and other scien-

tists to determine which areas of southern California are likely to experience higher levels of shaking in future earthquakes.

One graphic shows that shaking levels double from the edge of the Los Angeles basin, where the sediments are thin, to the middle of the basin, in the heart of Los Angeles, where soft sediments reach a depth of four miles.

The fact sheet, which includes downloadable color images, is available at the web site: [geopubs.wr.usgs.gov/fact-sheet/fs001-01/](http://geopubs.wr.usgs.gov/fact-sheet/fs001-01/).

## 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

#### MARCH

**14-15. MAE Center Short Course on Geotechnical Earthquake Engineering, Memphis, TN. See page 11. (3/01)**

19-22. International Symposium on Deformation Measurements, Anaheim, CA. Info: [www.pasadena.wr.usgs.gov/scign/fig/](http://www.pasadena.wr.usgs.gov/scign/fig/) (3/00)

21-23. Safety, Risk, and Reliability - Trends in Engineering, Malta. Info: [malta.2001@iabse.ethz.ch](mailto:malta.2001@iabse.ethz.ch), web site: [www.iabse.ethz.ch/conferences/malta](http://www.iabse.ethz.ch/conferences/malta) (11/99)

26-31. 4th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, San Diego, CA. Info: [prakash@umr.edu](mailto:prakash@umr.edu) (6/99, 2/00, 6/00, 1/01)

31-April 1. ASTM Symposium on Performance of Exterior Walls, Phoenix, AZ. Info: [pjohnson@dt.smithgroup.com](mailto:pjohnson@dt.smithgroup.com) (4/00)

#### APRIL

16-20. Conf. on Civil Engineering in Asia, Tokyo, Japan. Info: [www02.u-page.so-net.jp/tg7/cecar](http://www02.u-page.so-net.jp/tg7/cecar) (12/00)

18-20. SSA Annual Meeting, San Francisco, CA. Info: [www.seismosoc.org/meetings/](http://www.seismosoc.org/meetings/) (1/01)

#### MAY

**4. Los Angeles Tall Buildings Structural Design Council Annual Meeting, Los Angeles, CA. See page 10. (3/01)**

**10-11. 2nd ATC-35 National Earthquake Ground Motion Mapping Workshop, San Francisco, CA. See page 12. (3/01)**

21-23. ASCE Structures Congress

2001, Washington DC. Info: [www.asce.org/conferences/structures-2001](http://www.asce.org/conferences/structures-2001) (5/99, 8/99)

#### JUNE

4-6. SEM Annual Conference, Portland, OR. Info: [www.sem.org](http://www.sem.org) (9/00)

12-14. IABSE Conference on Cable-Supported Bridges, Seoul, Korea. Info: [secretariat@iabse.ethz.ch](mailto:secretariat@iabse.ethz.ch) (5/00)

17-22. ICOSSAR 2001, Newport Beach, CA. Info: [www.colorado.edu/engineering/ICOSSAR](http://www.colorado.edu/engineering/ICOSSAR) (6/00)

#### AUGUST

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

12-17. SMIRT Conference, Washington, DC. Info: [www.engr.ncsu.edu/SMIRT\\_16](http://www.engr.ncsu.edu/SMIRT_16) (7/00)

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

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

#### SEPTEMBER

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

#### OCTOBER

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

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

### 2002

#### FEBRUARY

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

#### JUNE

**10-12. 3rd International Conference on Composites in Infrastructure, San Francisco, CA. See page 5. (3/01)**

#### JULY

21-25. 7th National Conference on Earthquake Engineering, Boston, MA. Info: [www.eeri.org](http://www.eeri.org) (9/99)

### SEPTEMBER

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

## Announcements

### Geotechnical Earthquake Engineering in Mid-America

"Geotechnical Earthquake Engineering in Mid-America" is a course offered in two half-day sessions on March 14 and 15 in Memphis, Tennessee, covering topics in the developing field of soil-structure interaction, with an emphasis on the central and eastern United States.

Based significantly on the focus and the products of MAE Center research, this timely introduction to geotechnical problems includes case study presentations. A MAE Center team of leading researchers and end-users has been assembled to present the seminar.

This up-to-date and unique presentation is designed for the following technical professionals: industry and government design professionals who are concerned with the geotechnical implications of seismic design and risk evaluation in mid-America; practicing structural engineers who need to know what to ask of the geotechnical engineering community; geotechnical engineers who want to keep abreast of the latest research; and civil engineers who are interested in heavy structures, including headwalls, large culverts, and other structures that will be seriously affected by movement and liquefaction.

For more information, check the web site: [www.engr.uiuc.edu/ocee/GEE/index.html](http://www.engr.uiuc.edu/ocee/GEE/index.html).



## Announcements

### Workshop on National Earthquake Ground-Motion Mapping

The Applied Technology Council (ATC) has scheduled the *2nd ATC-35 Workshop on National Earthquake Ground-Motion Mapping* for Thursday and Friday, May 10-11, 2001, in San Francisco at the Radisson Miyako Hotel. The workshop is being convened by ATC and the U.S. Geological Survey (USGS).

Like the first ATC-35 Workshop on the same topic held in southern California, this workshop will provide a multidisciplinary examination of key scientific and design-related issues that affect the preparation of the second round of national ground-motion maps by the USGS and their possible modification and usage in recommended seismic design provisions and codes for buildings, bridges, and other facilities. The workshop will also provide input for USGS on new map-related products desired by map users.

The workshop is open to the profession at large, though space and participation may be limited. Registration will be accepted on a first-come, first-served basis. The registration fee of \$150 (\$120 for ATC subscribers) includes the cost of luncheons and refreshments. A late fee of \$25 will be imposed on registrations postmarked after May 1, 2001.

Persons wishing to participate should contact ATC, 555 Twin Dolphin Drive, Suite 550, Redwood City, CA 94065; phone: 650/595-1542; fax: 650/593-2320; e-mail: [atc@atcouncil.org](mailto:atc@atcouncil.org).

## Announcements

### USSD Graduate Scholarships Available

The United States Society on Dams (USSD) annually awards one or two scholarships to U.S. college or university graduate students (U.S. citizens only) whose research studies have a potential for developing solutions to design, analysis, construction, operation, safety, environmental, maintenance, and rehabilitation problems related to dams. The scholarship is a one-time award of \$10,000.

For additional information about the scholarship and USSD publications, programs, and membership, contact the USSD Denver Office (telephone 303/628-5430, e-mail [stephens@ussdams.org](mailto:stephens@ussdams.org)) or visit the USSD web site at [www.ussdams.org](http://www.ussdams.org). Complete applications must be received by April 30, 2001.



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