



PEER LAUNCHES YEAR 5 RESEARCH PROGRAM MESSAGE FROM THE DIRECTOR



Welcome to the introductory issue of *The PEER Review*, a new incarnation of the former *PEER Center News*. This issue introduces a new format featuring shorter articles on the PEER Center, timely news and notices, and pointers to sources of additional information. The new format responds to recom-

mendations of many of the newsletter's readers, including representatives of funding agencies, Business and Industry Partners, and PEER researchers, who urged development of a brisker information format highlighting PEER activities and opportunities. The format also reflects the changing face of information technologies, where technical writings, databases, and other resources increasingly are available online in a breadth, volume, and format beyond what can be contained in a traditional newsletter format.

The changing face of our newsletter also reflects the changing character of the PEER Center. Established in October 1997, PEER recently has undergone a critical National Science Foundation review of its past accomplishments and its proposal for continuation for

the next five years. The written report of the review committee recognizes the accomplishments of PEER in its first four years, and endorses PEER's proposal for continued funding. As PEER moves forward into its second phase, we will be emphasizing activities to translate research findings into usable results for earthquake practitioners and researchers, including:

- Applying PEER research results and approaches to testbed facilities so that implications for current practice can be understood (*please refer to article in this issue*);
- Continuing our jointly managed Lifelines program, with funding by Pacific Gas and Electric Company, the California Department of Transportation, the California Energy Commission, the Federal Emergency Management Agency, and others; and
- Developing a series of research implementation digests to efficiently translate research findings to usable procedures.

I hope you will find the revised newsletter format to be lively, friendly, and still providing access to state-of-the-art research results at PEER.

Jack P. Moehle, Director

2002 PEER ANNUAL MEETING

On January 17 & 18, 2002 PEER will once again return to the Oakland Marriott City Center Hotel for its **2002 Annual Meeting**. Day 1 of the program is intended for PEER participants (researchers, students, Business and Industry Partnership [BIP] members, committee members, and other project personnel) and will focus on the methodology testbed program in both plenary and breakout sessions. Following the conclusion of the Day 1 program, the **PEER Student Day** activities will begin. The Student Day, which will be closed to faculty and principal investigators, will bring together student researchers and BIP for presentations and discussion on current research being undertaken by both the students and BIP members. Day 2, which is open to both PEER participants and the public at-large, will feature research presentations and poster sessions on current PEER research and the Methodology Testbeds (*see article in this issue*).



There is no charge to attend the meeting, but pre-registration is required. For more information on the Annual Meeting, including a program and on-line registration form, please visit: <http://peer.berkeley.edu/2002annualmtg>

BUSINESS AND INDUSTRY PARTNERS (BIP) BANQUET

Each year, PEER hosts an invitational banquet honoring and thanking members of the Business and Industry Partnership (BIP) Program. Our next **BIP Banquet** will be held the evening of January 17, 2002 in conjunction with the Annual Meeting.

Following the conclusion of Day 1 of the 2002 Annual Meeting, there will be a reception followed by a banquet at the Oakland City Center Marriott, the Annual Meeting venue. The Banquet will feature a presentation by Ronald Hamburger, Chief Structural Engineer at ABS Consulting, on "The World Trade Center and Its Implications for Performance-Based Engineering."

The BIP program allows for organizations to participate directly with PEER and help shape the direction of future research. Current members of PEER's BIP Program include:

Applied Insurance Research
California Department of Transportation
California Energy Commission
Comartin-Reis
Computers and Structures, Inc.
Degenkolb Engineers
Dynamic Isolation Systems
Earth Mechanics
Exponent Failure Analysis Associates
Forell/Elsesser Engineering
Geomatrix Consultants

Hess Engineering
Imbsen Associates
K2 Technologies/E.W. Blanch
Nevada Institute of Technology
Ove Arup & Partners USA
Pacific Gas and Electric Company
Rutherford and Chekene
Skilling Ward Magnusson Barkshire
Southern California Edison
URS Corporation
Wiss Janney Elstner Associates, Inc. ●●●

PEER UNDERGRADUATE INTERNS CONVENE IN SALT LAKE CITY FOR TRI-CENTER YOUNG RESEARCHERS SYMPOSIUM



Students from across the country who participated in PEER's Research Experience for Undergraduates (REU) Summer Internship Program convened with fellow REU's from the MAE and MCEER Centers at the **3rd Annual Earthquake-Engineering Symposium for Young Researchers** in Salt Lake City, August 9-12. Each REU student made a PowerPoint presentation that provided an overview of their summer research. Field excursions in Salt Lake City for the symposium's participants included a behind-the-scenes tour of the Latter-Day Saints Church Conference Center to view seismic design strategies utilized to construct this 21,000-seat structure as well as a tour of the recently

retrofitted Salt Lake City and County Building. As previous years have demonstrated, the symposium has proven to be an excellent opportunity for students to interact with their peers who might have a different perspective of the profession since they come from other parts of the country as well as other disciplines. Activities such as the REU internships and symposium establish a network of camaraderie and support for young people who will hopefully meet again in the future as a colleague in industry, government or academia. For more information on future student programs or opportunities, please click on the "Education Program" button on the PEER homepage: <http://peer.berkeley.edu> ●●●

UP-TO-DATE TECHNICAL LITERATURE FOR RESEARCH AND PRACTICE



The University of California, Berkeley and the National Science Foundation (NSF)

have sponsored the **National Information Service for Earthquake Engineering (NISEE)** project since the San Fernando earthquake of 1971. Originally NISEE was designed to mitigate the narrow availability of specialized research in earthquake engineering and related fields of structural dynamics, geotechnical engineering, engineering seismology, and earthquake hazard mitigation policy. Twenty years later, NISEE regularly

serves an extensive audience of researchers and practitioners in the US and in over 100 countries with a variety of informational tools in the discipline.

NISEE's most popular informational tool, the Earthquake Engineering Abstracts (EEA) database, has grown from an annual book compiling selected research reports, to an unparalleled, online database freely available at the NISEE website <http://nisee.berkeley.edu/>. An easy-to-use EEA query screen provides access to nearly 100,000 citations, abstracts and selected full text in earthquake engineering. EEA uses full-text, subject keyword, author

and title searching capabilities. The database grows by about 550 new records each month and a new wireless version is available for researchers. Practicing engineers are often surprised by the easy access to the latest information to support engineering practice. Users outside the Berkeley domain have searched the database more than 31,000 times each month in the past two years. Reports or copies of articles are usually available the same day for domestic clients. Inquiries can be emailed to info@nisee.berkeley.edu or faxed to 510.231.9468. ●●●

THE PEER METHODOLOGY TESTBEDS APPLYING PBEE TO THE REAL WORLD

The **Methodology Testbeds**, an exciting new addition to the PEER research portfolio, was formally kicked-off at a workshop held in Oakland on November 2. The testbeds are real facilities, inventories of facilities, or networks to which the PEER performance-based earthquake engineering (PBEE) assessment and design methodologies will be applied. The primary purpose of the testbeds is to assess the applicability of the methodologies and foster their refinement. In addition, the testbeds will serve supplementary purposes such as further focusing and integrating the research, promoting multi-disciplinary research interactions, emphasizing systems level research, and involving interested earthquake professionals and decision-makers.

Using five testbeds (individual structures and groups of structures) the researchers will exercise PEER's methodology, assess its



strengths, and identify its weaknesses. The testbeds include a hotel in Van Nuys, a science building on the UC Berkeley campus, the Humboldt Bay bridge, a portion of the I-880 viaduct, and the highway network of the San Francisco Bay Area. Prior to the meeting Dr. **Keith Porter**, the George W. Housner Postdoctoral Fellow at Caltech, was chosen to serve as Testbed Coordinator. For more information on the PEER Methodology Testbeds, please visit: <http://peer.berkeley.edu/testbeds> ●●

EERI/FEMA GRADUATE FELLOWSHIP AWARDED TO PEER'S ANN MARIE KAMMERER

For the second year in a row, a member of PEER's Student Leadership Council (SLC) has been selected as the recipient of the prestigious NEHRP Graduate Fellow Award in Earthquake Hazard Reduction. Ms. **Ann Marie Kammerer**, a UC Berkeley Ph.D. candidate, is conducting research on the deformation potential of liquefiable soils particularly in the higher density ranges of interest in PBEE. Annie's selection follows that of Ms. **Tara Hutchinson**, the former UC Davis SLC representative and current Assistant Professor at UC Irvine, a PEER Core institution.

The Award—bestowed by EERI under a cooperative program funded by FEMA—intends to cultivate the participation of outstanding individuals working toward the objective of earthquake-hazard mitigation. Annie's visible and generous contribution to PEER's SLC and other Center activities has endeared her to many. She was the founding chair of PEER's SLC and has continued to be an active participant in the group's activities.

Annie's research constitutes the first simple-shear laboratory testing of "modeling" quality performed with two-directional shear loading (3-D) conditions. Her research will provide



insight into liquefaction in a more robust way than in the past due to its 3-D nature and will provide urgently needed data for numerical model development and calibration. The enthusiastic support of one of her advisors, Associate Professor **Juan Pestana-Nascimento**, suggests that Annie "...has the potential for becoming one of the leaders of geotechnical earthquake engineering in the very near future." The many students, faculty and staff at PEER who know Annie wholeheartedly concur with Professor Pestana-Nascimento's endorsement.

Most recently Annie participated in a "brown-water" rafting trip in Dinosaur National Monument just outside of Vernal, Utah. The team-building SLC activity followed the group's quarterly meeting held in Salt Lake City, which was scheduled to coincide with the REU symposium (*see article in this issue*). For more information about Annie's research, please visit her homepage at: <http://www.ce.berkeley.edu/~kammerer> ●●

AWARDS AND HONORS

Professors **Anil K. Chopra** (UC Berkeley) and **Rakesh K. Goel** (Cal Poly San Luis Obispo) were awarded the 2001 Normal Medal of the American Society of Civil Engineers (ASCE) for the paper "Evaluation of NSP to Estimate Seismic Deformation: SDF Systems," published in the *Journal of Structural Engineering*.

Professor **Armen Der Kiureghian** (UC Berkeley) was awarded the Movses Khorenatsi medal by the President of Armenia for fostering educational and scientific collaborations between Armenia and the United States.

Professor **Nicos Makris** (UC Berkeley) was awarded the Walter L. Huber Civil Engineering Research Prize of ASCE for his research on energy damping devices and clarifying the role of damping in seismic protection of structures.

Terrence F. Paret (Wiss, Janney, Elstner Associates, Inc.) was awarded the Moisseiff Award of ASCE for his papers on weld fractures during the Northridge Earthquake, which appeared in the *Journal of Structural Engineering*.

Professor **Jerome L. Sackman** (UC Berkeley) and **Loring A. Wylie, Jr.** (Degenkolb Engineers) were each installed as honorary members of ASCE for their extensive contributions to the profession.

Professor **Jonathan P. Stewart** (UCLA) was awarded the Arthur Casagrande Professional Development Award of ASCE for his outstanding research contributions in geotechnical earthquake engineering and his accomplishments as a practitioner and teacher.

Professor **Chia-Ming Uang** (UC San Diego), **Kent Yu**, **Shane Noel** (Degenkolb Engineers), and **John Gross** (NIST) were awarded the Raymond C. Reese Research Prize of ASCE for their paper on cyclic testing of rehabilitated steel moment connections, which appeared in the *Journal of Structural Engineering*. ●●

Errata from Spring 2001 Edition

In our article "The PEER Lifelines Program: Current Research in Design Ground Motions," which appeared in the Spring 2001 edition of the *PEER Center News*, the valuable contributions of 2 individuals were inadvertently not recognized in the article: Dr. **Brian Chiou** and Dr. **Clifford Roblee**, both of the California Department of Transportation. We truly regret the omission.

ADDRESS CORRECTION REQUESTED

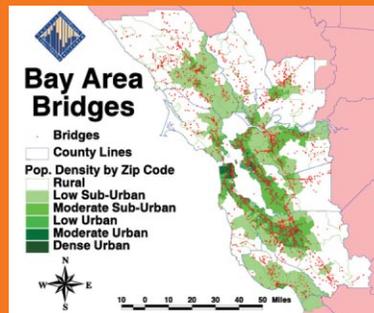


WEB SPOTLIGHT: YEAR 4 RESEARCH SUMMARIES

As a new regular feature, in each issue of The PEER Review we'll highlight noteworthy additions to the PEER website.

This month's **Web Spotlight** features the project summaries available on the PEER website for PEER Core and Lifelines projects funded in the Year 4 funding cycle (October 1, 2000–September 30, 2001). Project summaries may be viewed by Principal Investigator, or by research thrust area.

Each brief summary contains a link to more lengthy summaries, complete with graphics, project publications and links to project websites. The summaries were also included as part of PEER's Annual Report to the National Science Foundation and offer a concise overview of the research funded by PEER during that time span. To view the summaries, please visit: http://peer.berkeley.edu/yr4_research



NEWS DIGEST

- PEER is helping apply performance-based earthquake engineering (PBEE) methodologies to a **University of California at Berkeley-sponsored pier testing program** for a planned dining facilities building on the Berkeley campus. Recently, PEER hosted a briefing in an effort to increase communication among University personnel, contractors hired to construct the facility, geotechnical engineers and structural engineers. PEER's contact for the program is **Craig Comartin** of Comartin-Reis, a PEER Business and Industry Partner. For more information, please refer to http://peer.berkeley.edu/pier_testing
- In August PEER hosted an **OpenSees User and Developers' Workshop** aimed at fostering the small community of faculty, students, researchers and engineers involved with either using or developing OpenSees. To learn more about OpenSees or to be added to the group mailing list, visit: <http://opensees.berkeley.edu>
- This summer PEER helped organize the **Third US-Japan Workshop on Seismic Design Methodologies for**

Reinforced Concrete Buildings, in Seattle, Washington. The first two workshops in this series were held in Maui, Hawaii and Sapporo, Japan, respectively, and printed proceedings are available for purchase as *PEER Reports* (proceedings for the Third workshop are in preparation). Visit <http://peer.berkeley.edu/publications> for more information.

- PEER was pleased to co-sponsor 2 recent conferences: The **Tenth International Conference on Soil Dynamics and Structural Engineering (SDEE'01)** held at Drexel University in Philadelphia; and the **Western States Seismic Policy Council (WSSPC) Annual Conference**, held in Sacramento.
- The **UC Berkeley-CUREE Symposium in Honor of Ray Clough and Joseph Penzien** will be held May 10 & 11, 2001 at UC Berkeley. The symposium will highlight the notable contributions of these two pioneers in earthquake engineering. For further information or to register for the symposium, please refer to: <http://www.curee.org>

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PEER Center Director: Jack P. Moehle

The PEER Review Editor: Parshaw Vaziri

Contributors to this issue: Gregory Deierlein, Charles James, Gerard Pardoan, and Keith Porter

Design: Chen Design Associates, SF

PEER
1301 South 46th Street
Richmond, CA 94804-4698
Tel: 510.231.9554
Fax: 510.231.9471
Email: peer_ctr@peer.berkeley.edu
Web: <http://peer.berkeley.edu>

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