A National Science Foundation Earthquake Engineering Research Center:

Mid-America Earthquake Center

Headquartered at the University of Illinois at Urbana-Champaign

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http://mae.ce.uiuc.edu

This first issue of the MAE Center Newsletter sets the stage for many years of reporting of the Center's programs, projects, investigators and activities. Methods of information exchange during the current revolution in world-wide technology transfer have been radically improved as Internet access becomes a common household concept. Thus, a start of a new Newsletter of this sort cannot follow the traditional mode of only printing and mailing, but must rely on the in-depth back-up access that can be provided only through a website.

In the future, a fully electronic newsletter is envisioned where news of the Center will be updated daily to reflect the most current developments. Fully advanced media such as digital color photos, video clips, and numerical presentation of data are all within our present reach and will be pursued via the news portion of the website.

The MAE Center web site presently includes news of the Center as well as current descriptions of the five Center programs. Each project that is underway or planned for the coming years is described with a two-page task statement. This is done purposely to stimulate collaboration with researchers outside of the Center as well as end users of the research.

News groups for each of the Center's coordinated programs are already established to provide forums for the practicality and outcomes of their research projects. This is done to stimulate a two-way exchange of information rather than the traditional newsletter which is usually browsed once and tossed with no feedback to the investigators. All readers of this newsletter are invited to provide their comments and criticisms to individual Center investigators via this medium.

As the Center starts up further and the world wide web becomes more ubiquitous among earthquake engineers, this MAE Center Newsletter will slowly transition from its paper format to an electronic format. During this transition phase, this paper format is being introduced for the purpose of directing people towards the much more extensive information on the web site. The articles contained in this newsletter are only short snippets of information that provide a general overview of the Center's activities. The reader of this newsletter is strongly encouraged to go to the web site for extended information on any topic that is presented herein.

As an analog to the past, use of two or three color printing for newsletters was felt to promote the quality of an organization. By comparison, new advancements in electronic media are far superior to the traditional and costly printing technology. Therefore, a conscious decision was made to make this paper format as inexpensive as possible so that resources could be more wisely spent on development of the electronic format. Thus, please do not judge the quality of this newsletter by the monochrome format since a much more colorful and dynamic version of it lies at the web address shown above.

Happy trails to you as you explore the MAE Center web site.

FROM THE DIRECTOR

Getting into Position

This inaugural issue of the MAE Center Newsletter brings with it a special sense of accomplishment to me not only because it is a first of a series, but also because it represents a significant milestone in our Center's development. The MAE Center has gradually matured since our early discussions over two years ago to the point where we are now operating at near full speed. The central administration is in place and producing media products such as this newsletter to help establish our identity nationally and overseas. After many meetings and reviews, planning of the five coordinated programs are now complete and research, education and outreach projects are now underway. Considering that we started just ten months ago, I am proud of our development to date.

Though considerable progress has been made to establish the Center as a new entity in earthquake engineering research, there is still much to do as the programs grow and the collaboration potential is realized. The rewards of the planning efforts over the last two years will not materialize until the Center programs yield their intended products. If the programs do mature as planned, these products will result in a great deal of satisfaction since we will be making a difference for the better in reducing potential earthquake losses in the central and eastern United States.

Creation of the Center over the last two years has been a challenging task. I am relieved to sense that this start-up period is approaching an end. We are now in a position to start what can be a truly great endeavor if the research teams work together with trust and respect for one another. The strength of the Center lies in the strength of its researchers. The administration can provide the organization and the environment for discovery, but the success of the Center will depend to a great degree on the accomplishments of individual investigators. In future issues of this newsletter, these accomplishments will be highlighted to demonstrate the Center's progress towards meeting its goals.

The future will be bright for the MAE Center. I hope that you can share with me in enjoying this interesting development.

Daniel P. Abrams

Regional Offices Link the MAE Center with Business, Industry & Local Communities

The MAE Center has established three regional offices to serve as centers to foster the connection between the Center and business, industry and the local community. One of the major priorities will be to work with the Access2 program to establish cooperative efforts between business, industry and the MAE Center in the areas of research and technical support. Professional education and outreach efforts are other avenues open for exploration. The offices are located in Atlanta, Regional Director Barry Goodno, Memphis, Regional Director Arch Johnston and St. Louis, Regional Director Phil Gould. The role of the offices is new and the Regional Directors and the MAE Center are looking forward to establishing close working relationships in these regions. See the MAE Center web site at mae.ce.uiuc.edu for contact information.

Research Coordination Meetings: A Useful Collaboration

MAE Center Coordination Meetings are very much what they sound like. Twice a year researchers and end users in the Essential Facilities, Transportation Networks and Hazards Evaluation programs meet to discuss the progress of program-related research. End users are invited to provide input into the current research. The meetings provide an ideal opportunity for course corrections to take place both in the research and in the programs themselves. End users played a very important part in creating the current programs. Shortly after the MAE Center was established, researchers and end users met to discuss and identify possible research projects. The three research programs were built on the basis of those discussions.

This spring the MAE Center coordination meetings took place on May 27, 28 and 29, 1998. Tim Stark, Program Coordinator of the Transportation Networks, chaired the meeting in St. Louis. Researchers presented the status of their research and the end users and investigators met in breakout sessions to discuss research outcomes. The Essential Facilities coordination meeting took place the next day, May 28, at Georgia Tech in Atlanta, chaired by Barry Goodno, Program Coordinator of the Essential Facilities Program. The final spring coordination meeting was held in Memphis, Tennessee at the University of Memphis on May 29. Arch Johnston chaired the meeting as Program Coordinator of the Hazards Evaluation Program. The meetings have been very successful and will remain an integral part of the MAE Center research effort

Council of Center Directors Sign Implementing Agreement with Joint Research Centre of the European Community

Andrei Reinhorn representing MCEER; Jack Moehle, Director of the PEER Center; Dan Abrams, Director of the MAE Center and David Wilkinson, Director of ISIS of Joint Research Centre sign cooperative agreement in Paris.

Through an initiative of the MAE Center and the Joint Research Centre (JRC) of the European Community, an Implementing Arrangement has been signed between the Council of Center Directors of the three US earthquake engineering research centers and the JRC. The arrangement is one of the first to be developed under the soon-to-be implemented umbrella agreement for scientific and technological cooperation between the European Community and the government of the United States. Directors of the MAE and PEER Centers and a representative of MCEER met with David Wilkinson, Director of the Institute for Systems, Informatics and Safety at the JRC, Michel Geradin, Head of Structural Mechanics at the JRC, and Paolo Negro, earthquake researcher at JRC, to sign an Implementing Arrangement on September 8 during the 11th European Conference on Earthquake Engineering held in Paris.

The new cooperation will promote and enhance collaboration among research institutions affiliated with the JRC and the three centers; will advance the body of knowledge available and thereby reduce future losses of life and property damage from earthquakes and will allow for the widest possible exchange of information. The Implementing Arrangement provides a formal relationship for future joint workshops, seminars, symposia, exchange visits of researchers, and networking of experimental facilities.

The JRC, located in Ispra, Italy on the eastern shore of Lake Maggiore, is a central research facility of the European Commission. The European Laboratory for Structural Assessment (ELSA) is one research unit at the JRC that hosts a number of European cooperative earthquake engineering research projects.

Barry Goodno and Dan Abrams representing the MAE Center visited the ELSA facility following the Paris conference and discussed possible collaborative projects with the JRC staff.

Apart from state-of-the-art computational studies on seismic performance of structures, several concurrent large-scale pseudodynamic tests of building structures are being run in the ELSA laboratory as part of cooperative research programs among various European countries.

The new cooperation with the three US earthquake centers will be instrumental to future networking plans for experimental earthquake research worldwide.

Teachers construct a demonstration seismograph at Georgia Tech's teachers' workshop.

Teacher Workshops in Seismic Hazards and Earthquake Recording

Georgia Tech hosted two teacher workshops, one in Seismic Hazard and the other in Earthquake Recording June 22-25. Nineteen teachers from Georgia, Florida, Alabama, and Virginia participated. These teachers will use their new knowledge of seismic hazards and earthquakes to teach earth science, physics and computing at their home schools. These teachers will use their new knowledge of seism

To enhance the study of earthquakes and seismic hazard, the teachers constructed a demonstration seismo-graph for classroom exercises (see photograph shown above). The demonstration seismograph takes only 2 hours to build from easily acquired hardware at a total cost of less than $25. In addition, 12 teachers will receive a research grade seismograph, the Grualp PEPPV, for recording and exchanging data with other schools through a growing international network of scientists and teachers who are interested in earth-quakes. The instruments will also significantly improve the ability to record earthquakes in the eastern United States.

The two workshops are part of a MAE Center's education project, "Teacher Workshops in Seismic Hazards and Seismic Monitoring" under the direction of Leland Timothy Long, School of Earth and Atmospheric Sciences, and Roberto Leon, School of Civil and Environmental Engineering, Georgia Institute of Technology.

First Annual Investigators Meeting Planned for December

As a follow-up to the Program Coordination meetings held last May, one day meetings of the Transportation Networks, Essential Facilities and Hazards Evaluation Programs will be held concurrently on December 3 in Memphis. Once again, the purpose of these coordination meetings will be to provide a forum for researchers to link their projects to others in their respective programs and thus achieve the cross-disciplinary research intended through the MAE Center. In addition, end users of the research or researchers external to the Center are invited to participate.

Program meetings will be preceded with a plenary meeting of all center investigators starting at mid-day on December 2. The purpose of this half-day meeting will be to educate individual project investigators to the overall objectives and needs of the Center. This combined Annual Meeting will be planned each December and complemented in June with individual program meetings.

A meeting of the Center's Leadership Team is scheduled for December 4 to review Year 2 projects and start the process for approval of Year 3 projects.

Additional information on these meetings will be sent to all investigators via their program coordinators. Any other interested individuals should contact Judy Watson (jmwatsn1@uiuc.edu) for details.

Upcoming MAE Center Workshops and Seminars

As part of the Outreach Program of the MAE Center, two workshops are being planned as well as one seminar series for the upcoming months. Individuals interested in participating in these workshops should contact the Outreach Program Coordinator, Neil Hawkins (nmhawkin@uiuc.edu).

One workshop will be held on the topic of Insuring Against Earthquake Losses in Mid-America. The purpose of the workshop will be to identify top priorities of the insurance industry for research in earthquake hazard mitigation in the eastern and central United States. Representatives of the insurance industry as well as representatives of the code enforcement bodies will be invited to exchange views with MAE Center researchers. Discussion topics will include principal research concerns and needs of the insurance industry for earthquake hazard identification, quantification and mitigation.

Another workshop will be held to identify top priorities of the state departments of transportation and emergency services in the eastern and central United States. Representatives from the state DOT's and emergency services will be invited to participate with MAE Center researchers to discuss how to unify efforts on earthquake hazards mitigation and on defining research needs to reduce vulnerability of transportation networks.

The first MAE Center seminar series is being planned on the topic of Design Issues for Moderate Seismic Zones. A team of speakers will present the one day seminar in Atlanta, Memphis and St. Louis. The seminar series will be directed at structural engineers responsible for design or rehabilitation of structures in the central or eastern United States.

Student Field Mission Fellowships

Daniel P. Abrams and Amr Elnashai signing cooperative agreement.

A new MAE Center program will be starting in the spring of 1999 that will send graduate research assistants to earthquake damage sites in Europe. The student field mission fellowships will be run in conjunction with the graduate degree program in earthquake engineering within the Engineering Seismology and Earthquake Engineering Section (ESEE) at Imperial College in London. This degree program, organized by Professor Amr Elnashai, visits the site of past recent earthquakes in Europe for a week-long investigation.

Through a recently signed Memorandum of Understanding with ESEE and the MAE Center, a select group of Center graduate students will be allowed to join annual field missions for the purpose of training in methods of field assessment of earthquake damage. By mutual agreement with the ESEE, students from Imperial College may also join MAE Center investigations of earthquake damage on this side of the Atlantic.

Unless a more major earthquake occurs in the next year, the 1999 investigators will go to Adana, Turkey during the first week in May to examine damage from the earthquake of this past June.

Funding through the MAE Center Education Program for Year 2 and beyond will be reserved to cover travel expenses for up to four graduate students on MAE Center research projects.

A selection process is presently being planned for screening applicants. More information will be sent to faculty investigators on MAE Center projects by the Center Education Program Coordinator, Phil Gould (pgoul@seas.wustl.edu).

Society of Photo-Optical Instrumentation Engineers-Two Conferences

SPIE has issued a call for papers for two conferences, Smart Structures and Materials, March 1-5, 1999 and Nondestructive Evaluation Techniques for Aging Infrastructure & Manufacturing, March 3-5, 1999, Newport Beach, CA. See the SPIE web site at www.spie.org for conference information. Abstracts will still be considered. Ph: 360-676-3290.

MAE Center Featured in CUSEC'S Annual Conference

The Central U.S. Earthquake Consortium (CUSEC) invited MAE Center personnel to participate in its annual conference held June 14-16, 1998 in Louisville, Kentucky. Dan Abrams, Director of the MAE Center, spoke on "Toward an Integrated Strategy for Achieving Earthquake Risk Reduction in the Central United States," during the opening session and Jim Beavers, Deputy Director of the MAE Center, moderated the final session that addressed Implementation Opportunities. Four of the five major MAE programs were featured in the breakout sessions. Tim Stark, Transportation Program, Robert Herrmann, Hazards Evaluation and Essential Facilities Programs and Phil Gould and Jill Stevens Johnston, Earthquake Education Program. The MAE Center and CUSEC will be collaborating on future earthquake undertakings.

Learning from Earthquakes (LFE) Training Seminar to be Held in St. Louis

Earthquake researchers, students and professionals interested in learning how to conduct post earthquake reconnaissance investigations should reserve November 3, 1998 to attend this one-day seminar at the University of Missouri, St. Louis. Speakers include Don Ballantyne and Jim Beavers, lifelines, Loring Wyllie, structures and Lew Youd, geotechnical engineering. If you are interested in understanding what to look for and what you are looking at after an earthquake, register now. Admittance is free to EERI members. Non-EERI members will be charged a $25 seminar fee that includes a copy of the field guide.

The seminar is sponsored by EERI and the MAE Center. For registration information contact EERI by e-mail at eeri@eeri.org, telephone, 510-451-0905 or send a fax to 510-451-5411.

EERI Invites MAE Center to Host the 2000 Annual Meeting

The Board of Directors of the Earthquake Engineering Research Institute (ERRI) has selected the MAE Center to host its 2000 annual meeting. The spring meeting will be held in St. Louis, Missouri. The MAE Center staff is excited about the opportunity to host the meeting and have already started planning activities. Dan Abrams, MAE Center Director, has appointed Deputy Director Jim Beavers and Assistant Director Carolyn Sands to work closely with Susan Tubbesing, Executive Director of EERI, to define the theme, technical program, hotel location and other activities. Look for more information on the meeting in future issues.

Do you want to add your name to the mailing list or change your address? E-mail us at maecentr@uiuc.edu with your request and all the necessary details. We look forward to hearing from you.

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October 9 -- 20th Anniversary Symposium for the U.S.-Japan Cooperative Earthquake Engineering Research Program, Toranomon Pastral, Tokyo, Japan. Contact Steve Mahin (mahin@ce.berkeley.edu).

October 18-21 - ASCE Annual Convention, Sheraton Boston and Hynes Convention Center. Contact ASCE at **800-548-2723 or 703-295-6300.**

October 19-20 - Eastern Seismological Society of America, Millersville, PA, Bolger Conference Center.

October 22-23 - Fifth Annual Congress on Natural Hazard Loss Reduction, Institute for Business and Home Safety at Orlando Marriott. Theme: Disaster Resilient Homes, Businesses and Communities. Contact IBHS at 617-292-2003.

October 25-30 - Fall Convention of American Concrete Institute, Los Angeles. Theme: Seismic Design. Contact ACI at 248-848-3700.

October 30 - November 1 - MAE Center Research Assistant Symposium, Rend Lake Resort, IL. Contact Chuck Ammon (ammon@mnw.eas.slu.edu).

November 4-5 - First US-PRC-Japan Workshop on Future R&D Directions in Public Works, Civil Infrastructure Systems and Hazard Mitigation, Tongji University, Shanghai. Contact: Karen Bailey at Colorado School of Mines (kbailey@mines.edu).

November 12 - Hanson Engineers Seminar on Hazards and Public Policy, Springfield, IL. Contact: Marilyn Boland (mboland@staff.uiuc.edu).

November 25-27 - The 10th Japan Earthquake Engineering Symposium 1998, Yokohama, Japan. The 10th JEES will cover the broad aspects of recent research in earthquake engineering. Visit the conference web site: http://www.aij.or.jp/jees/index.html or e-mail jees@aij.or.jp for information about the conference and registration.

December 2-3 - MAE Center Annual Meeting and Program Coordination Meetings, Memphis, Contact Judy Watson (jmwatsn1@uiuc.edu).

December 7-8 - MAE Center Workshop on Infrequent, High Consequence Earthquakes, Hong Kong University of Science and Technology. Contact Neil Hawkins (nmhawkin@uiuc.edu).

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January 21-22 - Annual Meeting of Building Seismic Safety Council, Reno, Nevada. Contact Tom Hollenbach at BSSC (thollenbach@nibs.org).

January 21-25 - Annual Meeting of American Association for the Advancement of Science, Anaheim Hilton. Session on "Using Knowledge to Reduce Earthquake Losses," Jan. 24, 9am to noon. Contact www.aaas.org/meetings/scope.

February 3-6 - EERI Annual Meeting, Bahia Hotel, San Diego. Contact EERI (eeri@eeri.org).

April 20-21- JSCE International Seminar on Comparative Performances of Seismic Design Codes for Concrete Structures, Tokyo, Japan. Organized by the Concrete Committee of Japan Society of Civil Engineers. The seminar will introduce and review seismic design methods in major countries. For conference information contact Professor Hidetaka Umehara, Committee Secretariat, Department of Civil Engineering, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya 466-8555 Japan or e-mail umehara@conc2.ace.nitech.ac.jp.

May 3-4 - 1999 International Conference on Tall Building and Urban Habitat. The Tall Building and the City: The State of the Art for the Milleneum, Kuala Lumpur, Malaysia. The conference will address aspects of planning, management and design of tall steel, concrete and masonry buildings. For further conference information contact Secretariat, ICTBUH '99, Malaysia, Institute Sultan Iskandar, University of Technology Malaysia, Jalan Semarak, 54100, Kuala Lumpus, Malaysia or e-mail isikl@kired.utm.my.

June 6-9 - Eighth North American Masonry Conference, Austin, Texas. Contact: Rich Klingner (klingner@mail.utexas.edu).

June 13-16 - 8th Canadian Conference on Earthquake Engineering, Van-couver, B.C., Canada. The conference will address recent developments in research and practice and the important findings from studies of structural performance of structures. For conference information visit the web site at http://www.civil.ubc.ca/home/eq/conferences/ or e-mail 8CCEE@civil.ubc.ca.

August 12-14 - 5th U.S. Conference on Lifeline Earthquake Engineering (5USCLEE) Seattle, Washington. MCEER will coordinate the conference sponsored by ASCE's Technical Council on Lifeline Earthquake Engineering (TCLEE). The theme is "Optimizing Post-Earthquake Lifeline System Reliability." In addition to traditional lifeline topics, special emphasis will be put on bridge hazards, analysis and retrofit. Contact Andrea Dargush, (MCEER), University at Buffalo, Red Jacket Quadrangle, Buffalo, NY 14261-0025, Tel: 716-645-3391 or e-mail rgush@acsu.buffalo.edu.

Call for Papers

12th World Conference on Earthquake Engineering -2000

The New Zealand National Society for Earthquake Engineering will host the 12th World Conference on Earthquake Engineering January 30-February 4, 2000 in Auckland, New Zealand. The conference addresses earthquake risk reduction in developing countries, earthquake engineering, lifeline systems and other relevant topics. Abstracts must be received by October 15, 1998. Send abstracts to the Secretary, 12WCEE Technical Programme Committee, C/-Department of Civil Engineering, University of Canterbury, Private Bag 4800, Christchurch, New Zealand. For additional information e-mail 12wcee@civil.canterbury.ac.nz.

1999 LA Tall Buildings Annual Meeting

The Los Angeles Tall Building Structural Design Council 1999 Annual Meeting will be held in Los Angeles on May 7, 1999, at USC's Davidson Center. The focus is on structural design and construction issues related to tall buildings. The abstract deadline is January 11, 1999. Submit abstracts to: Dr. Marshall Lew, Proceedings Chair, Law/Crandall, 200 Citadel Drive, Los Angeles, California 90040, e-mail: mlew@lawco.com.

MAE Center RA Symposium Scheduled for end of October

The first ever symposium of graduate research assistants on MAE Center research projects is planned for the end of October at the Rend Lake Resort in Wayne Fitzgerrell State Park in southern Illinois. The purpose of the annual symposium will be to bring graduate students crossing several of the Center's disciplines together in a unique forum to discuss how their research projects are truly complementary. Faculty are of course welcome to attend, but the focus of the meeting will be on projects conducted by graduate students.

The symposium will kick-off on Friday evening, October 30 and adjourn at mid-day on Sunday, November 1. Further details on the meeting will be sent to all MAE Center project participants by the symposium chair, Chuck Ammon at Saint Louis University (ammon@mnw.eas.slu.edu). Reservations can be made at Rend Lake by calling 1-800-633-3341. Room rates are $65 per night for a single and $66 per night for a double. Additional people can stay in a room for $9.

Emma Shepherdson, MIT, Chuck Ammon, Washington University, and Catherine Johnson, IRIS Consortium, finalize undergraduate project recommendations in the breakout session.

Workshop On Earthquake Education in Mid-America Held June 7-9, 1998

A Workshop on Earthquake Education in Mid-America sponsored by the MAE Center was held on June 7-9, 1998 at Saint Louis University in St. Louis, Missouri. The purpose of the Workshop was to identify the major thrusts in earthquake education the MAE Center should pursue in its Education Program. Phillip L. Gould, Education Program Coordinator, was the principal Workshop organizer. Over 30 participants were invited, all active in earthquake education.

During the first day, participants listened to presentations describing a wide variety of earthquake education activities and programs. The following day Workshop participants divided into four breakout sessions to discuss, prioritize and recommend education projects for the Program. The breakout sessions addressed earthquake education in K-12, undergraduate, graduate and technology and public education.

Recommendations included preparation of earthquake education modules for K-12, undergraduate non-science majors and graduate-level engineering programs focusing on earthquake hazards awareness and earthquake engineering. Creation of a Virtual Learning Center (VLC), a web-based site containing earthquake-related virtual programs such as experiments in earthquake engineering, computer tutorials and text material and design of a science museum display were also recommended.

Representatives from the MAE Center universities, MCEER, PEER, the IRIS Consortium, EQE International, Imperial College, London and the Center for Earthquake Studies at Southeast Missouri State University attended the Workshop. Presenters from Purdue University, Southern Illinois University at Edwardsville and the University of Missouri at Columbia also participated.

Mid-America Earthquake Center

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Address Correction Requested