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Program



University of
California



The City and
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Francisco



Pacific Gas
and Electricity



Earthquake Engineering
Research Institute



Structural Engineers
Association of
California

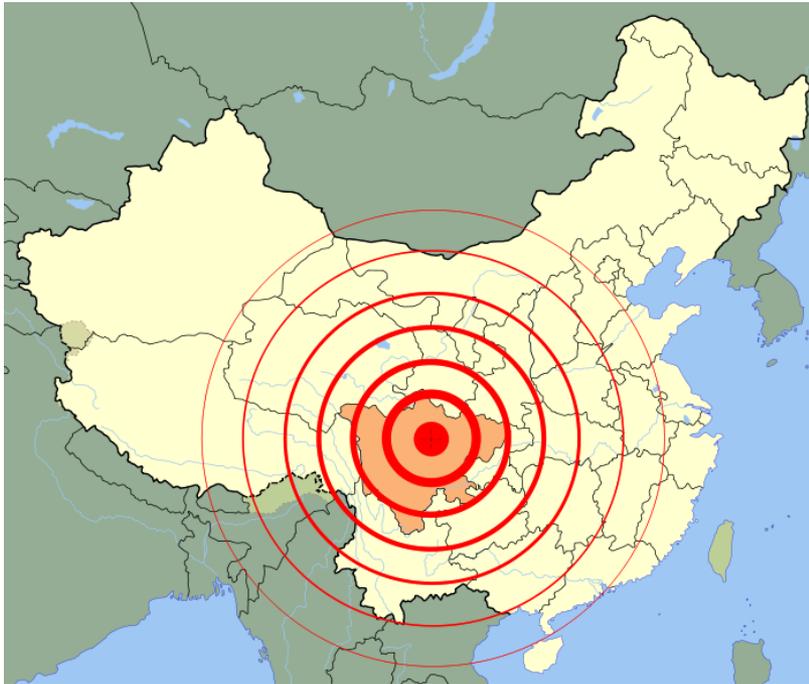
The Great Wenchuan, China Earthquake of May 12, 2008

Observations on the earthquake and its
effects, and on lessons for earthquake
preparedness in the US and China

Stephen Mahin, *UC Berkeley*
Moderator



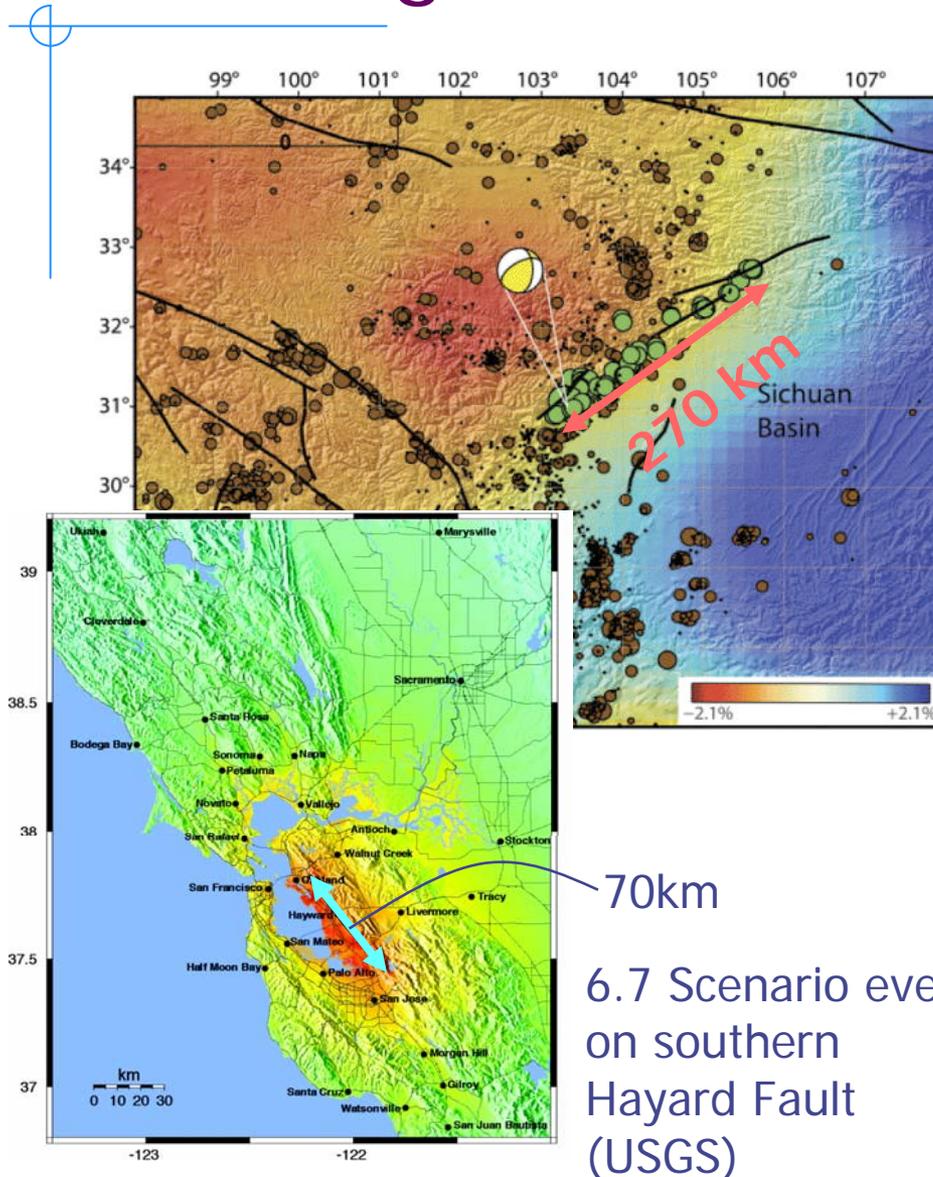
Wenchuan Earthquake Basics



Source: Wikipedia

- ◆ Occurred at 2:28 PM on May 12, 2008
- ◆ Magnitude about 8.0
- ◆ Epicenter located in Wenchuan County in eastern Sichuan Province
- ◆ Casualties: nearly 70,000
- ◆ Injuries: more than 370,000
- ◆ Missing: about 18,000
- ◆ About 4.8 million homeless as a result of the earthquake

Learning from Great Earthquakes



- ◆ About one Magnitude 8 or greater event per year
- ◆ Similar in magnitude to prior great quakes:
 - 1906 San Francisco (7.7-7.9)
 - 1923 Great Kanto (Tokyo) event (7.9-8.3)
 - 1976 Tangshan (7.8)
- ◆ Widespread damage to buildings, bridges, lifelines, etc.

Agenda

- | | |
|--|---------|
| Welcome: Edwin Lee, SF City Administrator | 4:10 PM |
| Strong Ground Motion, Damage and Loss of the Great Wenchuan Earthquake: Zifa Wang, Director, Institute of Engineering Mechanics, Chinese Earthquake Authority, Harbin, China | 4:15 PM |
| Panel Presentation and Discussion
(Friedman, Kalonji, Lew, Lui, Mosalam, Sun) | 5:00 PM |
| Audience Q&A | 6:10 PM |
| Concluding Remarks: Stephen Mahin | 6:25 PM |
| Adjourn | 6:30 PM |

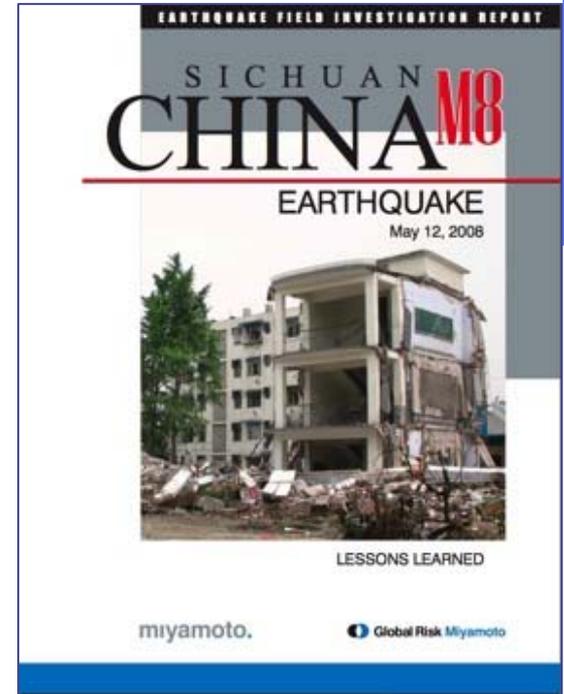
Numerous Reconnaissance Teams

◆ Miyamoto International

- *Kit Miyamoto*
- *Chris Heaton*
- *Rocky Ng (China Rail)*

Arrived in Sichuan on
May 18, 2008

<http://www.miyamotointernational.com>



◆ Skidmore Owings and Merrill, San Francisco

- *Neville Matthias*

University of California's *10+10 program*

Includes collaboration with 10 universities in China, including Sichuan University

◆ Coordinator for post-earthquake investigations

Gretchen Kalonji (Coordinator)

Director of International Strategy Development
UC Office of the President

◆ Environmental and Medical Sciences

Shu Geng, UC Davis

Professor, College of Agriculture and Environmental Sciences

Mark Levine, Lawrence Berkeley National Laboratories

Head, China Energy Group
Director, Environmental Energy Technologies Division

Bai-Lian (Larry) Li, UC Riverside

Professor of Ecology

Dr. Edmund Seto, UC Berkeley

Lecturer, School of Public Health

Craig Van Dyke, UC San Francisco

Professor and Chair, Department of Psychiatry
Representative, UC System-wide Global Health Sciences Initiative

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◆ Coordinator for post-earthquake investigations

Gretchen Kalonji (Coordinator)

Director of International Strategy Development
UC Office of the President

◆ Engineering and Information Technology

Chaitanya K. Baru

San Diego Supercomputer Center; UC San Diego

Stephen Mahin, UC Berkeley

Professor of Structural Engineering

Khalid Mosalam, UC Berkeley

Professor, Civil and Environmental Engineering

Marios Panagiotou, UC Berkeley

Professor, Civil and Environmental Engineering

Benson Shing, UC San Diego

Professor, Structural Engineering

Nicholas Sitar, UC Berkeley

Professor, Civil and Environmental Engineering
Director, Earthquake Engineering Research Center

NSF Panel of Experts

Stephen Mahin, UCB

Marios Panagiotou, UCB

Benson Shing, UCSD

Les Youd, BYU

Residential Housing and Schools

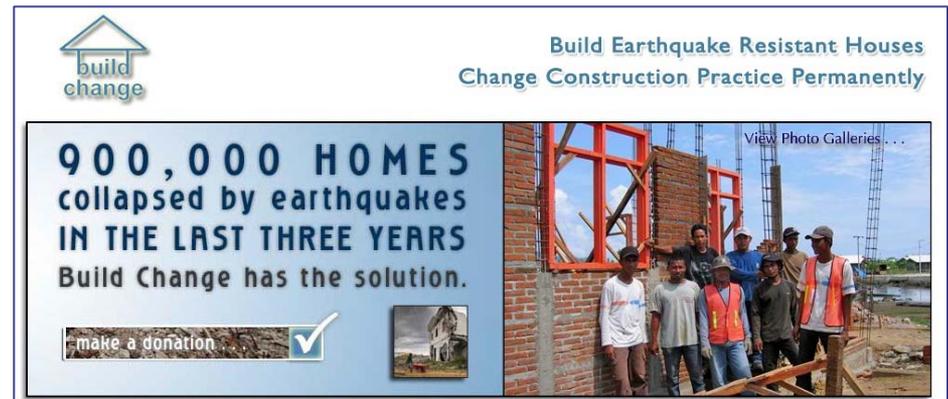
◆ Build Change

Elizabeth Hausler

Culturally sensitive, low cost, earthquake-resistant housing in:

- ◆ China,
- ◆ Indonesia and
- ◆ Peru

<http://www.buildchange.org>



The advertisement features the 'build change' logo at the top left, which consists of a house icon above the text 'build change'. To the right, the text reads 'Build Earthquake Resistant Houses' and 'Change Construction Practice Permanently'. Below this, a large blue box contains the text '900,000 HOMES collapsed by earthquakes IN THE LAST THREE YEARS' and 'Build Change has the solution.' At the bottom left of this box is a 'make a donation' button with a checkmark icon. To the right of the text is a photo gallery showing a group of people standing in front of a brick building under construction. A small 'View Photo Galleries...' link is visible in the top right corner of the photo gallery.

◆ Geohazards International

Improving disaster preparation and mitigation for schools, hospitals, other community resources

Veronica Cedillos

<http://www.geohaz.org/>

Others

- ◆ California Department of Conservation
 - Strong Motion Instrumentation Program
 - ◆ Moh Huang
- ◆ Pacific Gas and Electricity
 - ◆ Dr. Joseph Sun
 - ◆ Lloyd Cluff

EERI/GEER Reconnaissance Mission

◆ Combined team fielded by:

- Earthquake Engineering Research Institute
- Geo-Engineering Earthquake Reconnaissance (GEER) Association

◆ EERI Team Members

- Marshall Lew (Team Leader) -
MACTEC Engineering and Consulting, Los Angeles
- David Friedman and Dennis Lau (structural engineering) --
Forell/Elsesser Engineers, Inc., San Francisco, CA
- Laurie Johnson (urban planning) -- Consultant, San
Francisco, CA
- Tricia Wachtendorf (social science) -- Disaster Research
Center at the University of Delaware, Newark; and
- Jian Zhao (structural engineering) -- University of Wisconsin,
Milwaukee, WI



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◆ GEER Team Members

- David Frost, Georgia Institute of Technology, Savannah;
- J. P. Bardet, University of Southern California, Los Angeles, and
- Tong Qiu of Clarkson University, Potsdam, New York.



Geo-Engineering Earthquake Reconnaissance
Turning Disaster into Knowledge

Pacific Earthquake Engineering Research Center

PEER's mission is to develop and disseminate performance-based earthquake engineering (PBEE) technology for design and evaluation of buildings, lifelines, and infrastructure to meet the diverse seismic performance objectives of individual stakeholders and society.

- Primary focus has been developing a *performance-based framework methodology* together with *knowledge and enabling technologies* to implement PBEE in engineering practice.
- Special focus on issues that are central to the western U.S., extended to the Pacific Rim through international collaborations, with lessons learned applied to other regions.
- Values and promotes interdisciplinary collaboration among researchers, engineers and other stakeholders

<http://peer.berkeley.edu>

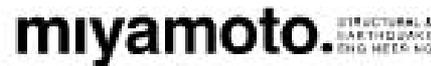


PEERs Business and Industry Partners

Financial sponsors of today's meeting



Risk Management Solutions



Wiss, Janney, Elstner Associates, Inc.



FORELL/ELSEESSER ENGINEERS, INC.
Structural Engineers

BL Schmid Consulting
Structural Engineering



Earth Mechanics, Inc.
Geotechnical and Earthquake Engineering



City and County of San Francisco

China Earthquake Technical Partnership

City spearheading a public-private sector partnership on mechanisms to respond to the technical challenges created by the Wenchuan Earthquake

Leadership

Gavin Newsom, Mayor

Edwin Lee, Chief Administrative Officer

Department of Building Inspection

Isam Hasenin - Director (past)

Vivian Day - Acting Director

Department of Emergency Management

Fire Department

<http://groups.google.com/group/sf-chinaeq>