



## MCEER's International Collaborations Help UB "Reach Others"

MCEER's international research, education and outreach activities encompass projects and programs that help advance the Center's mission of equipping communities worldwide with disaster resilience knowledge, tools and technologies. The same programs also advance the goals of the UB 2020 Strategic Strength on Extreme Events: Mitigation and Response, as well as the University's broader "Reaching Others" initiative. Recent international research collaborations, memoranda of understanding, post-disaster missions and workshops/conferences are listed below.

### Current & Recent International Collaborations

#### HAITI

- University of Quisqueya (UniQ): Partnership to help Haiti rebuild through continuing earthquake engineering education programs and development of a Master's program in earthquake engineering.
- Appropriate Infrastructure Development Group (AIDG)-MCEER Emergency Engineering Support Team: Assess the safety of buildings, principally hospitals, schools and food storage facilities following the January 12, 2010 earthquake in Haiti on behalf of the United Nations.
- Global Earth Observation-Catastrophe Assessment Network (GEO-CAN): Collaboration with worldwide network of experts to assess damage in Haiti.
- World Bank-RIT-ImageCat: Disseminate airborne remote sensing data collected days after the earthquake via the MCEER virtual disaster viewer.

#### CHINA

- State Key Laboratory for Disaster Reduction in Civil Engineering, Tongji University: Joint research and workshop series on special bridges; development of new laboratory facilities; large-scale testing of continuous bridges.
- Institute of Engineering Mechanics, China Earthquake Administration: Joint research investigation on damage and collapse mechanisms of buildings following the 2008 Wenchuan earthquake; development of large-scale testing of actual apartment buildings in China.

#### TAIWAN

- National Center for Research on Earthquake Engineering (NCREE), National Taiwan University: Full-scale testing of segmental bridge columns; joint research on steel plate shear walls; joint research and reconnaissance following the 1999 Chi-Chi earthquake.

#### US – TAIWAN - JAPAN

- National Taiwan University, National Taiwan University of Science and Technology, Public Works Research Institute of Japan and Sumitomo Mitsui Construction Co., Ltd. Japan: International workshop on seismic connection details for segmental bridge construction to advance accelerated bridge construction in seismic areas.
- National Center for Research on Earthquake Engineering (NCREE) in Taipei, Taiwan and Bridgestone Corporation, Tokyo, Japan: Joint research on seismic protection of transformer/bushing systems with base isolation.

#### JAPAN

- Kyoto University: Joint research on damage and collapse mechanisms caused by high intensity, long duration earthquakes based on data collected following the 2011 Tohoku, Japan earthquake.

### Memoranda of Understanding and Other Collaborations

- Asian Pacific Network of Centers for Earthquake Engineering Research (ANCER): Center-to-Center coordinated and cooperative research and outreach activities to reduce seismic hazards worldwide.
- Beijing Institute of Technology, Beijing, China: Joint research on multi-hazard mitigation for urban and public infrastructure.
- Bogazici University, Istanbul, Turkey: Collaborative research on seismic isolation systems.
- Kajima Corp., Tokyo, Japan: Development of collapse analysis and solution issues, together with the Consortium of Universities for Research in Earthquake Engineering (CUREE).
- Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana: Collaboration to train KNUST faculty and staff in earthquake engineering, exchange graduate students, and train engineers in Ghana on seismic resistant design.

- National Autonomous University of Mexico (UNAM), Mexico City, Mexico: Collaborative research and educational exchanges in earthquake engineering.
- NWFP University of Engineering and Technology, Earthquake Engineering Center (EEC), Peshawar, Pakistan: Training program on earthquake engineering technologies and testing techniques, and exchange program.
- PRC-U.S. Earthquake Engineering Forum for Young Researchers: Forum to establish professional opportunities between young researchers from the U.S. with their counterpart professionals in China.
- Rose School/EUCENTRE (European Center for Training and Research in Earthquake Engineering), University of Pavia, Italy: Student, researcher and faculty exchanges, report exchanges, workshops and conferences.
- University of Chile, Santiago, Chile: Collaborative project to exchange experiences in the evaluation of earthquake effects on the infrastructure (structural and nonstructural components) of acute care facilities.
- University of Quisqueya, Port-au-Prince, Haiti: Provide immediate training in ATC-20 rapid building assessment procedures and earthquake engineering fundamentals, develop educational programs on seismic design of buildings with a focus on reconstruction, promote academic exchange and cooperation.

### **International Post-Disaster Missions**

- Tohoku, Japan Earthquake and Tsunami, March 11, 2011
- Christchurch New Zealand Earthquake, February 21, 2011
- Darfield, New Zealand Earthquake, September 4, 2010
- Chile Earthquake, February 27, 2010
- Haiti Earthquake, January 12, 2010
- West Sumatra Earthquake, September 30, 2009
- L' Aquila area of Central Italy, April 6, 2009
- Wenchuan, China Earthquake, May 12, 2008
- Pisco, Peru Earthquake, August 15, 2007
- Tsunami/Earthquake in South Asia, December 26, 2004
- Bam, Iran Earthquake, December 26, 2003
- Boumerdes, Algeria Earthquake, May 21, 2003
- Changureh, Iran Earthquake, June 22, 2002
- Chi-Chi, Taiwan Earthquake, September 21, 1999
- Athens, Greece Earthquake, September 7, 1999
- Marmara (Kocaeli), Turkey Earthquake, August 17, 1999
- Quindio, Colombia Earthquake, January 25, 1999

### **MCEER International Workshops/Conferences**

#### **2011**

Fourth UniQ-UB/MCEER Earthquake Engineering Seminar – Port-au-Prince, Haiti, August 1-23

Third UniQ-UB/MCEER Earthquake Engineering Seminar – Port-au-Prince, Haiti, March 12-22

#### **2010**

International Workshop on Infrastructure Systems for Nuclear Energy – Taipei, Taiwan, December 15-17

Eighth International Workshop on Remote Sensing for Disaster Management – Tokyo, Japan, September 30-October 1

Second UniQ-UB/MCEER Earthquake Engineering Seminar – Port-au-Prince, Haiti, September 5-9

First UniQ-UB/MCEER Earthquake Engineering Seminar – Port-au-Prince, Haiti, May 20-22

#### **2009**

Seventh International Workshop on Remote Sensing for Disaster Management – Austin, Texas, October 22-23

International Specialty Workshop on Seismic Connection Details for Segmental Bridge Construction – Seattle, Washington, July 22-24

#### **2008**

Sixth International Workshop on Remote Sensing for Disaster Response – Pavia, Italy, September 11-12

4th U.S.-Taiwan Bridge Engineering Workshop – Princeton, New Jersey, August 4-5

#### **2007**

Fifth International Workshop on the Application of Remote Sensing for Disaster Response – Washington D.C., September 10-11

U.S.-Italy Seismic Bridge Workshop – Pavia, Italy, April 19-20

#### **2006**

Second U.S.-Taiwan Bridge Engineering Workshop – San Mateo, California, September 21-22

Fourth International Workshop on Remote Sensing for Post-Disaster Response – United Kingdom, September 25-26

Tri-Center Field Mission – New Zealand, August 15-23

Fourth PRC-U.S. Workshop on Bridge Engineering: Advancing Bridge Technologies in Research, Design, Construction and Preservation – Chongqing, China, June 19-21

Fourth International Workshop on Seismic Design and Retrofit of Transportation Facilities – San Francisco, California, March 13-14