**GEM Semi-Annual Meeting Highlights**

GEM held its Semi-Annual meeting on June 6-8, hosted by a GEM public sponsor, the Taiwan Earthquake Model, on the campus of Taiwan's premier science institution, *Academia Sinica*. The meeting was attended by GEM and TEM scientists and engineers from 26 countries. Many Governing Board and Scientific Board members also attended. Because of its location, the focus of the meeting was Asia, where the seismic risk could not be higher or more important. In fact, just after the meeting ended, Taiwan experienced a M=6.5 offshore earthquake, followed by a 300 mm deluge that temporarily closed the Academia Sinica campus.

The meeting opened with a eye-opening field trip to the site of the 1999 M=7.6 Chi-Chi earthquake that killed 2,415 people, destroyed 50,000 buildings, and cost $10 billion (US) in direct losses. We visited the Chelungpu fault rupture, looked at the massive offset to the Shigong dam, which has become a "National Earthquake Memorial Landscape," toured the complete destruction of the Kwangfu Junior High School that has been preserved as part of the 921 Earthquake Museum of Taiwan. The museum—which features earth science and engineering exhibits than encompass GEM's own scope—is simply outstanding. We also visited the new Training Facility of the National Fire Agency, where we watched fire fighters being schooled in post-quake emergency rescue, including cutting through reinforced concrete walls and putting out fires.

We then held a compact meeting with just 1.5 days of presentations. After a welcome by co-hosts Kuo Fong Ma of TEM and Ross Stein of GEM, the meeting was opened by bestowal of the inaugural GEM Outstanding Contribution Award to USGS engineer Kishor Jaiswal, who has contributed deeply to three Global Components projects. Kishor's acceptance speech was inspiring to all of us, and his presentation was excellent. Then, Execom members Marco Pagani and Helen Crowley, and Secretary General Rui Pinho, presented the progress on the OpenQuake software engine, and on the developing OpenQuake web portal. Ecuador built its first seismic hazard model with OpenQuake, and as a result is now writing its first building code. Canada and Australia will build their next national hazard models with OpenQuake; the pan-Europe SHARE (Seismic Harmonization of Europe) project is using OpenQuake for their hazard model due in December. Geoscience Australia is teaching OpenQuake in the Philippines and Indonesia.

There were many scientific and emotional high points to the meeting, and the enthusiasm and engagement of GEM's Sponsors and participants was palpable. Rui welcomed new Sponsors, Chile, Renaissance Re, and Nephila Capital Management. The new ISC-GEM earthquake catalog for 1900-2009 will make obsolete its precedent, the widely-used Centennial catalog, in part because the scientists who assembled the Centennial catalog are now building this successor, relocating 20,000 earthquakes in the process. GEM's global strain rate model, with three times the data and vastly better coverage than the 2004 model, will be finished soon. Geoscience Australia's Nick Horspool is leading the charge for OpenQuake, teaching

it in Manila in September, and has even written a User Manual for it directed to those with little technical experience.

We heard about probabilistic seismic hazard assessment efforts in Taiwan, Japan, Korea, Vietnam, Thailand, Bangladesh, and Indonesia. Sharing approaches, discussing common problems, and overcoming obstacles became a theme of the meeting. In the final session, we turned our attention to the social and economic vulnerabilities of so many developing countries that greatly compound the physical losses and subvert their resiliency, and reflected on the ultimate beneficiaries of GEM's work, the emergency managers, masons, carpenters, local governments, and community leaders who need to translate the knowledge that GEM seeks to impart into action.

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