

State of California
Seismic Safety Commission

Memo

To: Commissioners

From: **Richard McCarthy**
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Date: **December 2, 2014**

Subject: Update on the Global Earthquake Model (GEM) Projects

Background

GEM will publicly release OpenQuake on-schedule on December 31, followed by a release event on January 21st in Pavia, Italy. This milestone represents the culmination of 5 years of development and an investment of more than \$25 million. The release event will occur during the same week as the next Governing and Science Board meetings, and we are anticipating about 60 to 75 members of the wider GEM community to celebrate this major accomplishment. The OpenQuake platform for earthquake risk assessment includes original datasets, software, graphical interfaces, and tools for modeling and visualization, all open and free for public use.

The precedent that GEM has set for open data and modeling, and for public-private partnerships, is now being actively followed by the climate change community. Next week at the AGU meeting, GEM will participate in invitation-only workshop hosted by the World Bank and the White House office of Science and Technology Policy, the third-in-a-series to develop a proposal for a Public-Private Partnership on Climate Data and Information for Resilient Development.

GEM is also progressing on the Commission-funded projects. On the recovery modeling projects, our collaborator Henry Burton accepted a highly-competitive tenure-track faculty position at UCLA, which he began in September, and the commission project has been his first and primary research activity. He and his students have actively been conducting analyses to produce recovery curves, specific relationships between damage states and time to regain function for a given building. Meanwhile in Pavia, the team is establishing macro-level relationships between damage and recovery time, by analyzing historical data from the Northridge and Loma Prieta earthquakes.

On the sensitivity testing project, the OpenQuake release will already include risk and hazard toolkits for investigating the influence of modeling parameters on results. As a next step, we have actively begun to conduct analyses to produce results for California and identify the most influential parameters. Again we are making use of historical data from Northridge and Loma Prieta, to make comparisons and validate our findings.

In conclusion, GEM gratefully acknowledges the Commission's continued support and active participation. This collaboration sets the standard for the type of win-win partnerships that make GEM unique.

Recommendation

At the December meeting, Ms. Kate Stillwell will provide an update from the Global Earthquake Model (GEM) on the Commission's projects. Commissioners should be prepared to ask questions of Ms. Stillwell and provide any needed direction.