

California Citizen Seismologists Become Volunteer Quake Catchers

Claudia Cowan, KTXL (Sacramento television), 8-6-11

With the threat of devastating earthquakes looming in California's future, scientists are racing to develop an early warning system, much like Japan's, where mobile alerts are saving lives.

Now, researchers at Stanford University are testing a potential game-changer that relies on a massive array of tiny, low-cost earthquake sensors and a network of volunteers to become quake catchers.

"If we can see the earthquake with more sensors up close, we can learn more about how the earthquakes rupture, and understanding earthquakes better is better for all of us," said Jesse Lawrence, assistant geophysics professor at Stanford University.

The sensors -- called accelerometers -- are cheap and easy to make. Lawrence said they're like the chips in Wii gaming systems, or in laptops.

The challenge is getting them into as many homes and offices as possible, which is where Stanford's Quake Catcher Network comes in.

Across the Bay Area, volunteers like Carl Holzwarth are signing up to help develop the world's largest, low-cost strong motion seismic network. A Silicon Valley engineer -- and seismology enthusiast -- he's agreed to lend the Quake Catcher Network his extra bandwidth space on his home computer for at least a year.

During our visit, Holzwarth was getting briefed on how the sensor would be glued to his floor to record ground motion, and help determine whether an earthquake was actually happening. The sensors are so accurate, they can differentiate ground shaking caused by kids jumping up and down, for instance. Special software was then downloaded, and cables connected to a spare USB port. Now, so long as his computer is on, the sensor will relay any seismic activity back to Stanford.

"What we're looking for, effectively, is like a drop on the pond. When you have a drop in a pond, you expect a ripple outwards. From an earthquake, we expect a ripple outwards. So we're looking for that same kind of pattern," Lawrence said.

More than 600 citizen seismologists are now volunteer quake catchers, including many who live near the precarious Hayward Fault, which is reportedly overdue for a major event. As he looked around his Spanish-style hilltop estate, Holzwarth said he and other quake catchers have a stake in the data they're helping collect.

"This house has been here for 5 to 6 years. Everybody said the big one is coming, that could be 5 years away, could be tomorrow. So, let's get involved, see what we can do," he said.

The project is in the very early stages of testing. But scientists say because the technology is so inexpensive, they hope to get thousands of the sensors linked up to the internet throughout the western U.S., and eventually around the world.

"This gives everyone the ability to take a little bit of earthquake preparedness in their own hands...to help develop the next generation system that can really help save lives," Lawrence said.

Still, it's with mixed emotions that researchers and quake catchers await the next big temblor.

Ideally, they're hoping it's strong enough to provide usable data, but not so big as to cause real damage or injuries.