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Not My Fault: Honoring Brian Tucker who's boosted earthquake resiliency around the globe

Lori Dengler/For the Times-Standard
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It is easy to be overwhelmed by world problems and feel there is no way to make any headway. As a prelude to Thanksgiving, I devote today's column to Brian Tucker, a colleague and friend who has never let pessimism get in the way of reducing disaster vulnerability even in the poorest parts of the globe.

Last weekend I attended Brian's retirement celebration. Brian walked away from a prestigious position with the California Geological Survey to do something that had never been done before. He founded the first nonprofit entirely devoted to reducing losses from earthquakes and other geological hazards in the world's most vulnerable countries. And he started it with no guaranteed source of funding.

Brian's unconventional career didn't begin so differently than mine. He was a year ahead of me and we crossed paths briefly during my first quarter of graduate school at Scripps Institute of Oceanography. I decided Scripps wasn't for me and headed back to Berkeley while he persevered, received his PhD, completed a postdoc at MIT, got a great job as head of the geological hazards program at the California Geological Survey, and even served as Acting State Geologist for a time. He was well positioned for a long, productive and safe career in State public service.

But it wasn't enough. Brian was always interested in the impacts of science on the lives of people. As a postdoc at MIT, Brian worked in Tajikistan where he was constantly reminded of how differences in building practices affected vulnerability. In the late 80s while back in California two earthquakes made a deep impression. A M6.8 earthquake struck Armenia in December 1988 and the M6.9 Loma Prieta earthquake hit the San Francisco Bay Area about ten months later. The earthquakes were of similar size and affected areas with similar population densities. Sadly, that's where the similarities ended. At least 25,000 people died in the Armenian quake compared to 63 in Loma Prieta.

The discrepancy in casualties had one clear cause. Bad buildings. The structures had weak foundations and weak connections between floors and walls. I used slides from the Armenian quake in my Earthquake Country class to illustrate what happens when buildings are poorly tied together. The earthquake struck just before noon on a Wednesday when people were in shops and office buildings and children were in schools. Hospitals performed particularly poorly, killing as many as two-thirds of the doctors in cities near the epicenter.

But it was the performance of schools that particularly weighed on Brian. In Armenia, hundreds of schools collapsed and the toll of school children was in the thousands. California has included earthquake design elements in public schools since the Field Act of 1933. California continues to strengthen earthquake design criteria after the lessons of each strong quake. There was no significant structural damage to SF Bay Area schools in 1989.

What if, thought Brian, lessons from California could not only be transferred to other countries, but implemented as well? In 1991, Brian walked away from his job and founded GeoHazards International (GHI), a non profit/non governmental organization dedicated to using first world science to building resilience in economically distressed foreign countries. Brian knew that earthquake safety was not the top priority in poorer countries. But these were the places where casualty totals skyrocketed, particularly in poor neighborhoods. It is true that disasters affect everyone – but the rich usually only lose money while the poor lose their lives.

Brian collected a group of like-minded engineers, scientists, social scientists and urban specialists to identify doable projects and worked with locals to prioritize and develop affordable and socially compatible mitigation techniques. Take the quake safe school desk project as an example. There is nothing more tragic than children dying when schools collapse. The best solution is well-built school buildings. But there are too many substandard schools in the world and, even if resources were available, it would be impossible to replace them before the next strong quake. GHI partnered with an Israeli designer and the country of Bhutan to build desks that would resist being crushed if even if heavy school roof collapsed. They found local crafts people to build them and provided the desks to schools free of cost. The desks are functional for educational purposes, can be adapted for different class configurations. And, if an earthquake strikes, will save lives.

I connected with Brian after the 2004 Indian Ocean tsunami. The tsunami peaked his interests in tsunami planning, especially in countries with limited resources but large hazard exposure. He immediately started looking for resources and by the spring of 2007 found enough seed money to gather a group of experts and staff to hammer out a tsunami resiliency guidebook for third world communities. It was a testament to Brian's vision and persuasive capabilities that he was able to draw such a group together for two days with no offer of monetary compensation. He made all of us feel privileged just to be part of the conversation. I still consider that guidebook valuable to any group involved in community planning, no matter what part of the world.

I am thankful to Brian Tucker in so many ways. And if he and GHI can reduce risk in Bhutan, Nepal, Haiti and at least two-dozen other countries, we can follow his example and build resilience here at home.

Note: Learn more about the earthquake desk at https://www.youtube.com/watch?v=KUONYzHQrjo.
The GHI Tsunami Planning Guidebook is at https://docs.wixstatic.com/ugd/08dab1_631420a2f9da40638cf2db45d069c1a2.pdf .

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