To explore the fundamental riddle of earthquakes—why quakes are sporadic when the forces that drive them are steady—Ross will use QuakeCaster, a demonstration tool he developed that provides a way to visualize how researchers are making progress in the difficult problem of earthquake forecasting. He will then delve into the strange world of earthquake interaction and triggering, using computer animations and slides to extend the demo into three dimensions. These show how stress triggering can make sense out of earthquake sequences in California, Turkey, Japan, and Indonesia. Finally, Ross will argue that very rarely, San Andreas-like megaquakes trigger large aftershocks all over the globe.

ROSS STEIN is a leading earthquake researcher, communicator and educator. Based at the USGS in Menlo Park, Ross studies the physics of earthquakes in an attempt to develop better ways to make seismic hazard assessments and forecasts. In 2009, he co-founded the Global Earthquake Model, a public-private partnership that is building the first seismic risk model for the world.