

## Rall Walsh

Recent Graduate of the Stanford Center for Induced and Triggered Seismicity  
Stanford University

### “Managing Induced Seismicity: Two Probabilistic Geomechanical Approaches”

**Abstract:** Starting in 2009, 8% of Oklahoma’s land area had half of the earthquakes east of the Rocky Mountains. I’ll introduce challenges of induced seismicity focusing on Oklahoma. To do so, I’ll differentiate between saltwater disposal wells and hydraulic fracturing wells. I’ll show a probabilistic geomechanical model, and apply it to mapped faults through a Monte Carlo approach. This is combined with hydrologic modeling to site new disposal wells away from critically stressed faults. Finally, I’ll suggest a different approach to managing hydraulic fracturing seismicity in real time based on the seismogenic index, with a case study of a well stimulation in Ohio.

