

2023 Northern California Earthquake Hazards Workshop
January 31 – February 2, 2023
USGS, virtual from Moffet Field, California
Pacific Standard Time (UTC-8)

AGENDA

Day 1, Tuesday, January 31

9:30-10:00 a.m. Welcoming Remarks

David Applegate, U.S. Geological Survey Director (USGS)
Christine Goulet, Earthquake Science Center Director (USGS)
Keith Knudsen, Northern California Earthquake Hazards Program Coordinator #1 (USGS)
Sarah Minson, Northern California Earthquake Hazards Program Coordinator #2 (USGS)
John Grindle, Workshop Format (Grin Events)

10:00-11:45 a.m. Community-Based Risk Reduction

Speakers [15 min each]:

Janise Rodgers (Geohazards International) *Effectiveness of Past California Earthquake Scenarios in Motivating Mitigation*
Janiele Maffei (CEA) *Reducing Residential Earthquake Risk – How focusing on one vulnerability will impact post-earthquake resilience and recovery*
Sarah Atkinson (SPUR Oakland) *Let's work together: Unifying earthquake preparedness with regional safety & resilience efforts.*
AJ Faas (SJSU) *Post-Vulnerability: Reciprocal Knowledge Production for Disaster Risk Reduction*
Laura Hall (RDPO/Portland Metro UASI) *Cohesive, consistent, accessible, trauma-informed disaster messaging*
Discussion: 30 min

Moderators: **Shanna McClain** (NASA), **Danielle Mieler** (City of Alameda)

11:45 a.m.-1:00 p.m. Break

1:00-2:30 p.m. Where in the World is NCEHW Today? How Green and Hazardous was my Greenville Fault?

Speakers [15 min each]:

Gareth Funning (UCR) *Preliminary estimates of crustal deformation between the Bay Area and the Sacramento-San Joaquin Delta*
Chris Madugo (PG&E) *The Concord-Green Valley Fault Zone: Overview and Industry Perspective*
Lian Xue (PKU) *Kinematics of the 2015 San Ramon, California earthquake swarm: Implications for fault zone structure and driving mechanisms*
Artie Rodgers (LLNL) *Scenario Earthquake Simulations for the Greenville Fault*

Discussion: 30 min

Moderators: **Don Hoirup** (DWR), **Chad Trexler** (USGS)

2:30-3:00 p.m. Break

3:00-5:00 p.m. Ferndale Earthquakes: A Late-Breaking Session Late on the First Day

5:00 p.m. Adjourn day 1

Welcome to the U.S. Geological Survey.

We serve the Nation by providing reliable scientific information. The USGS strives to provide a diverse, inclusive, and respectful environment because it is essential to the integrity of our organization and our science. If anything fails to exemplify these ideals, please alert an organizer for immediate assistance.

Day 2, Wednesday, February 1

9:30-11:00 a.m. **Where in the World is NCEHW Today? Do You Know the Way to San Jose?**

Speakers [15 min each]:

Julien Marty (UCB) + **David Oppenheimer** (USGS) *2022 M5.1 Alum Rock Event – Background and Analysis*

Rob Skoumal (USGS) *Using machine learning techniques to improve focal mechanisms*

Heather Shaddox (UCB) *Creepmeter data on the San Andreas and Calaveras faults*

Alex Sarmiento (UCLA) + **Steve Thompson** (LCI) *A Probabilistic Fault Displacement Hazard Map of California: Approach and First Results*

Discussion: 30 min

Moderators: **Vicki Langenheim** (USGS), **Heidi Stenner** (Geohazards International)

11:00-11:15 a.m. **Break**

11:15-11:45 a.m. **Thunder Talks**

11:45 a.m.-12:45 p.m. **Break**

12:45-2:15 p.m. **Where in the World is NCEHW Today? A Dirigible Over Silicon Valley With a View...to a Kill!**

Speakers [15 min each]:

Carl M. Wentworth (USGS scientist emeritus) *The Quaternary Santa Clara basin and San Francisco Bay trough: origin, fill, and faulting*

Carol Prentice (USGS) *Effects of the 1906 and 1989 earthquakes in the southern Santa Cruz Mountains and San Jose area*

Felipe Aron (PUC-CIGIDEN Chile) *The river structure of fault-bounded mountains can be used to inform seismic hazard assessments*

John Baldwin (LCI) *Fault rupture hazard investigation of the Silver Creek fault, San Jose, CA*

Discussion: 30 min

Moderators: **Chris Hitchcock** (InfraTerra), **Judy Zachariasen** (CGS)

2:15-2:30 p.m. **Break**

2:30-4:15 p.m. **Modeling is Better with Friends: Updates from California Community Models**

Speakers [15 min each]:

Josie Nevitt + Austin Elliott (USGS) *Shallow fault creep within the Bay Area fault system from near-field observations*

Roland Burgmann (UCB) *Geodetic constraints on spatio-temporal variations of crustal deformation and slow fault slip in Northern California*

Greg Beroza (Stanford) *Some Recent Developments in Earthquake Monitoring*

Russ Graymer (USGS) *Developing a geology-based 3D seismic velocity model of the Central California Coast Ranges*

Evan Hirakawa (USGS) *Current state and future directions for the USGS San Francisco Bay region 3D seismic velocity model (SFVM)*

Discussion: 30 min

Moderators: **Jess Murray** (USGS), **Andreas Plesch** (Harvard)

4:15 p.m. **SCEC expansion breakout/Adjourn day 2**

Day 3, Thursday, February 2

9:30-11:15 a.m. **Where in the World is NCEHW Today? A Blast from the Geysers.**

Speakers [15 min each]:

Jared Peacock (USGS) *Characterizing the Clear Lake Volcanic Field with geophysics*

Patricia Martínez-Garzón (GFZ) *Induced Earthquake Potential in Geothermal Reservoirs: Insights from The Geysers Geothermal field*

Andrew Delorey (LANL) *Triggered Earthquakes as a probe for stress conditions*

Tamara Jeppson (USGS) *Effect of thermal and mechanical processes on hydraulic transmissivity evolution*

Roland Gritto (Array Information Technology) *High Resolution Seismic Imaging of Reservoir Properties using a High-Density Seismic Network at The Geysers Geothermal Reservoir*

Discussion: 30 min

Moderators: **Ole Kaven** (USGS), **Dennise Templeton** (LLNL)

11:15-11:30 a.m. **Break**

11:30 a.m.-12:15 p.m. **Thunder Talks**

12:15-1:20 p.m. **Break**

1:20-2:15 p.m. **What Can the USGS Do for You?**

Speakers [10 min each]:

Eleanour Snow (USGS) *USGS internship programs and partnerships that support students*

Steve DeLong (USGS) *Student Internships: Increasing access to early-career experience at the U.S. Geological Survey Earthquake Science Center*

Gavin Hayes (USGS) *The Mendenhall post-doctoral fellowship program and other development opportunities at the USGS Earthquake Hazards Program*

Gavin Hayes (USGS) *External Grants Overview and Q&A*

Discussion: 15 min

Moderator: **Gavin Hayes** (USGS)

2:15-2:20 p.m. **Break**

2:20-3:20 p.m. **Thunder Talks**

3:20-3:30 p.m. **Break**

3:30-5:15 p.m. **The Future is Soon: Northern California Updates to the NSHM and Beyond UCERF3**

Speakers [15 min each]:

Fred Pollitz (USGS) *Contribution of Deformation Models to the 2023 Update to the National Seismic Hazard Model*

Kaj Johnson (IU) *Physically-constrained creep rates for California faults in the 2023 NSHM model*

Alex Hatem (USGS) *Northern California earthquake geology input data for use in the 2023 U.S. National Seismic Hazard Model*

Kevin Milner (USC) *Updated Fault System Inversion Solutions and Hazard Implications for Northern California*

Mark Petersen (USGS) *Changes in the 2023 National Seismic Hazard Model in northern California from ground motion model updates*

Discussion: 30 min

Moderators: **Noha Farghal** (RMS), **Grace Parker** (USGS)

5:15 p.m. **Concluding Remarks**

5:30 p.m. **Adjourn**