Day 1, Tuesday, January 30
9:30-9:45 a.m. Welcoming Remarks
Christine Goulet, Earthquake Science Center Director (USGS)
Sarah Minson, Northern California Earthquake Hazards Program Coordinator (USGS)
John Grindle, Workshop Format (Grin Events)

9:45-11:30 a.m. Ethical earthquake investigation
Speakers [15 min each]:
Rachel Adams (CU Boulder Natural Hazards Center) Resources for Ethical Earthquake Research
Leila Darwish (Disaster Resilience & Risk Reduction Specialist, City of Vancouver) Considerations for Equitable Earthquake Recovery & Community Collaboration
Eduardo Miranda (Stanford) Post-earthquake reconnaissance in developing countries
Lindsay Davis (USGS) Ethical earthquake investigation: an international humanitarian assistance perspective
Lilia Yumagulova (Preparing Our Home; University of Saskatchewan) Cultural safety and ethical space in earthquake preparedness planning in Indigenous communities

Round Table Discussion: 30 min
Moderators: Sue Hough (USGS), Maggie Ortiz-Millan (EERI)

11:30 a.m.-12:30 p.m. Break

12:30-1:30 p.m. Thunder Talks I [4 min each]
Moderator: Grace Parker (USGS)
Arben Pitarka (LLNL), Michael Barall (USGS), Domniki Asimaki (Caltech), Irene Liou (UC Davis), Albert Kottke (PG&E), Evan Reis (Safehub), Mike Greenfield (Greenfield Geotechnical), Kenneth Hudson (Hudson Geotechnics, Inc. & UCLA), Emrah Yenier (Haley & Aldrich), John Downes (UW), Max Schneider (USGS), Zahraa Saiyed (Scyma Consulting/World Bank)

1:30-1:45 p.m. Break

1:45-2:45 p.m. Thunder Talks II [4 min each]
Moderator: Josie Nevitt (USGS)
Clifford Thurber (UW Madison), Arthur Rodgers (LLNL), Eric Matzel (LLNL), Guoliang Li (USC), Weiqiang Zhu (UC Berkeley), Rob Skoumal (USGS), Yifang Cheng (UC Berkeley), Felix Waldhauser (Columbia University), Scott Marshall (Appalachian State University), Scott Callaghan (SCEC), Mark Benthien (SCEC/USC)

2:45-3:00 p.m. Break

3:00-4:40 p.m. Earthquake early warning around the world and back to northern California
Speakers [10 min each]:
Mitsuyuki Hoshiba (JMA) Review of nationwide earthquake early warning in Japan: 15 years’ operation by JMA
Allen Husker (Caltech) EEW in central Mexico – The Seismic Alert System (SASMEX)
Francesco Finazzi (University of Bergamo) Crowd-sourced smartphone-based EEW. The Earthquake Network citizen-science initiative
Elizabeth Cochran (USGS) ShakeAlert: An Earthquake Early Warning System for the West Coast of the United States
Frannie Edwards (SJSU Mineta Transportation Institute) EEW Systems and Emergency Management
Ann Bostrom (UW) Recent evolution of EEW expectations and needs on the US West Coast

Round Table Discussion and Q&A: 40 min
Moderators: Sara McBride (USGS), Jessie Saunders (Caltech)

4:40 p.m. SPECIAL PRESENTATION: Mitsuyuki Hoshiba (JMA) Overview of the 2024 Noto peninsula earthquake

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, January 31

9:30-11:00 a.m. 1989 Loma Prieta earthquake: Part I – A lesson in liquefaction
Speakers [15 min each]:

Tom Holzer (USGS) Liquefaction and the Loma Prieta Earthquake and implications for future Northern California earthquakes
Jorge Macedo (Georgia Institute of Technology) Harbor Bay Business Park liquefaction during Loma Prieta earthquake - A critical state perspective
Kristin Ulmer (Southwest Research Institute) Energy-based Framework for Evaluating Liquefaction
Davis Engler (USGS) A Bayesian framework for incorporating surficial geology and CPT records within the USGS Ground Failure Liquefaction product

Discussion: 30 min
Moderators: Robb Moss (Cal Poly San Luis Obispo), Eric Thompson (USGS)

11:00-11:10 a.m. Break

11:10 a.m.-12:30 p.m. 1989 Loma Prieta earthquake: Part II – Impacts on stakeholders then, now, and in the future
Speakers [10 min each]:

Cynthia Kroll, Retired Chief Economist, Association of Bay Area of Governments (ABAG/MTC)
Jeff Bachhuber, Director of Geosciences, Pacific Gas & Electric Company (PG&E)
Roberts McMullin, Senior Civil Engineer, East Bay Municipal Utility District (EBMUD)
Tim Dawson, Manager of Seismic Hazards Program, California Geological Survey (CGS)
Bart Ney, Office Chief Public Affairs & Strategic Communications, Caltrans Bay Area

Discussion: 30 min
Moderators: Tom Brocher (USGS scientist emeritus), Ruth Harris (USGS)

12:30-1:30 p.m. Break

1:30-3:30 p.m. Earthquakes and climate change: how climate change increases earthquake vulnerability and impacts
Speakers [15 min each]:

Lori Dengler (Cal Poly Humboldt) The Great Alaska earthquake of 1964 and the evolution of the modern tsunami warning system
Michael Furniss (Cal Poly Humboldt) Remembering the Christmas Storm of 1964
Daniel Swain (UCLA) Will increasing ‘hydroclimate whiplash’ in a warming climate amplify co-seismic hazards in California (and beyond)?
Deepti Singh (Washington State University) Compounding climate events and their influence on disaster vulnerability and preparedness
Charles Scawthorn (Pacific Earthquake Engineering Research Center, U.C. Berkeley and PA Risk LLC) Climate change effects on earthquake risk
Noah Patton (National Low Income Housing Coalition) Affordable Housing and Disaster Recovery: Challenges and Best Practices

Discussion: 30 min
Moderators: Steve Ingebritsen (USGS), Jia Wang-Connelly (CalOES)

3:30-3:45 p.m. Break

3:45-4:45 p.m. Thunder Talks III [4 min each]
Moderator: Austin Elliott (USGS)

Christie Rowe (McGill University), Dana Marino (McGill University), Chris Bloszies (LCI), Kim Blisniuk (SJSU), Tyler Ladinsky (CGS), Ben Melosh (USGS), Don Hoirup (CADWR), Allyson Carroll (Cal Poly Humboldt), Stephen DeLong (USGS), Clara Yoon (USGS), Danielle Lindsay (UC Berkeley), John Eidinger (G&E Engineering Systems), Lori Dengler (Cal Poly Humboldt)

4:45 p.m. Adjourn day 2
Day 3, Thursday, February 1
9:30-11:15 a.m. 2014 South Napa, 2004 Parkfield, and earthquakes around the world: afterslip, afterslip, and more afterslip
Speakers [15 min each]:
  Jan Premus (Géoazur Laboratory) Friction driven seismic and postseismic slip of the 2014 South Napa earthquake
  Nicola D’Agostino (INGV) Space-time distribution of afterslip following the 2009 L’Aquila earthquake
  Ziyadin Cakir (Istanbul Technical University) Surface creep along the East Anatolian Fault (Turkey) and the Mw 6.8 February 24, 2020 Elazığ Earthquake
  Celeste Hofstetter (UC Riverside) Did creep stop the 2023 Mw7.8 Pazarçik earthquake rupture?
  Rob Churchill (Guy Carpenter) Aseismic Afterslip: an important, but not universal, driver of Aftershock Sequences
Discussion: 30 min
Moderator: Junle Jiang (University of Oklahoma), Kathryn Materna (University of Colorado)

11:15 a.m.-12:15 p.m. Break

12:15-2:15 p.m. When earthquakes come in twos and fours: the 2023 Turkiye and 2023 Afghanistan earthquakes
Speakers [15 min each]:
  Nadine Reitman (USGS) The 2023 Türkiye Earthquakes: Response, surface rupture, and hazard implications
  Richard Walker (University of Oxford) Seismotectonic and societal aspects of the 2023 7-15th October Herat, Afghanistan, earthquake sequence
  Jeanne Hardebeck (USGS) Stress Shadows: Insights into the Physics of Earthquake Triggering
  Annemarie Baltay (USGS) Mistaken (ground motion) identity: doublets vs. aftershocks
  Robert Graves (USGS) Broadband Ground Motion Simulations for Scenario Earthquakes on the Hayward and Calaveras Faults
  Jessica Velasquez (Moodys RMS) The Risky Business of Clustered Events: Navigating the complexities of damage attribution, hours clauses, and progressive damage
Discussion: 30 min
Moderators: Noha Farghal (Moodys RMS), Kevin Milner (USGS)

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

2:30-4:00 p.m. One earthquake = One critical lesson learned
Speakers [10 min each]:
  David Wald (USGS) The 100th Anniversary of the Great Kanto (Tokyo) Earthquake and Fire
  Bob McPherson (Cal Poly Humboldt) A diverse aftershock response for the 1992 M = 7.2 Cape Mendocino earthquake
  Sue Hough (USGS) The 1994 Northridge Earthquake: A Watershed Event for Instrumental Seismology and Macroseismology
  David Schwartz (USGS) 1974 Trans Alaska Pipeline Design vs 2002 M7.9 Denali Fault Surface Rupture: And the Lesson Learned Is...
  Anne Wein and Sara McBride (USGS) Canterbury Earthquake Sequence: Preparing for long term communication about aftershocks
  David Shelly (USGS) Subduction zone fault systems intertwined: How the intraslab 2022 M 6.4 Ferndale earthquake triggered postseismic slip on the subduction interface
  Jon Stewart (UCLA) Benefits and Impacts of Post-Event Reconnaissance
Discussion: 20 min
Moderator: Laurie Johnson (Laurie Johnson Consulting), Michael Oskin (UC Davis)

4:00 p.m. Concluding Remarks

4:15 p.m. Adjourn
Thunder Talks I
Arben Pitarka (LLNL) 5Hz Ground Motion Simulations of the 1989 Loma Prieta Earthquake Using a Deterministic Approach
Michael Barall (USGS) Non-Linear Radiation Damping Applied to Hayward Dynamic Rupture Simulations
Domnik Asimaki (Caltech) Data-Driven Nonlinear Site Response for Regional-Scale Ground Motion Simulations
Irene Liou (UC Davis) Characterizing aleatory variability and epistemic uncertainty in 3D simulations
Albert Kottke (PG&E) Probabilistic earthquake scenarios of ground shaking and ground deformation in the SF Bay Region
Evan Reis (Safehub) Real time earthquake damage notifications using low cost instrumentation in the Bay Area
Mike Greenfield (Greenfield Geotechnical) A remarkable absence of liquefaction: Data-driven lessons from the 2014 South Napa Earthquake
Kenneth Hudson (Hudson Geotechnics, Inc. & UCLA) Next Generation Liquefaction Probabilistic Triggering and Manifestation Models
Emrah Yenier (Haley & Aldrich) Mean Period of Ground Motions for Cascadia Subduction Earthquakes
John Downes (UW) Tracking Perceptions and Attitudes in Washington, Oregon and California about the Earthquake Early Warning System for the United States of America
Max Schneider (USGS) Translating user needs into new maps and visualizations for aftershock forecasts
Zahraa Saiyed (Scyma Consulting/World Bank) Equity and social vulnerability in earthquake and wildfire risk mitigation policy

Thunder Talks II
Clifford Thurber (UW Madison) Development and validation of a 3D tomographic seismic velocity model for the San Francisco Bay area
Arthur Rodgers (LLNL) Adjoint Waveform Tomography of the Greater San Francisco Bay Area
Eric Matzeli (LLNL) Fault imaging using virtual seismometers
Guoliang Li (USC) Multi-scale seismic imaging of fault-zone structures in Southern California with full-waveform inversions of regional and dense array data
Weiqiang Zhu (UC Berkeley) PhaseNet+: A Multi-task Deep Learning Model for Seismic Arrival Time and Polarity Picking and Source Parameter Prediction
Rob Skoumal (USGS) SKHASH: A Python Package for Computing Earthquake Focal Mechanisms
Yifang Cheng (UC Berkeley) Stress map of California: Interaction between fault and stress along the transform boundary in California inferred from focal mechanisms of small earthquakes
Felix Waldhauser (Columbia University) Towards real-time monitoring of repeating earthquakes in northern CA
Scott Marshall (Appalachian State University) The SCEC Community Fault Model in Northern California
Scott Callaghan (SCEC) Updates on CyberShake in Northern California
Mark Benthien (SCEC/USC) HayWired Scenario Exercise Toolkit: New Topics and Training Opportunities

Thunder Talks III
Christie Rowe (McGill University) How wide are faults and when does it matter?
Dana Marino (McGill University) Exploring the Geomorphic Expression of the Northern Calaveras Fault
Chris Bloszies (LCI) Paleoseismic Investigation of the Lafayette fault and the Contra Costa Shear Zone: an uncharacterized and potential transfer structure within the East Bay Hills, Contra Costa County, CA
Kim Blisniuk (SJSU) Updated slip rates and field observations on faults of the northern San Andreas Fault: implications on kinematic models and earthquake probability models for California
Tyler Ladinsky (CGS) Updated Alquist-Priolo Fault Zoning for the southern Rodgers Creek Fault
Ben Melosh (USGS) The geometry of fault reactivation and uplift along the central part of the Maacama fault zone, northern California Coast Ranges
Don Hoirup (CADWR) NWLSZ, Grizzly Valley Fault, trench findings
Allyson Carroll (Cal Poly Humboldt) Earthquake indicators in coast redwood tree rings along the North Coast San Andreas Fault
Stephen DeLong (USGS) Tectonic Geomorphology at the Mendocino Triple Junction
Clara Yoon (USGS) Distinct yet adjacent earthquake sequences near the Mendocino Triple Junction: 20 December 2021 Mw 6.1 and 6.0 Petrolia, and 20 December 2022 Mw 6.4 Ferndale
Danielle Lindsay (UC Berkeley) Slow moving landslide response to large earthquakes in Northern California
John Eidinger (G&E Engineering Systems) Lifeline impacts of the 2023 Ferndale earthquake
Lori Dengler (Cal Poly Humboldt) All new edition of Living on Shaky Ground, the Northern California earthquake tsunami preparedness magazine