



2021 BASIN AND RANGE PROVINCE EARTHQUAKE WORKING GROUP MEETING SUMMARY Monday, February 9, 2021 Virtual due to COVID-19 Pandemic

WELCOME AND INTRODUCTION

The Basin and Range Province Earthquake Working Group (BRPEWG) aims to bridge the gap between Basin and Range Province (BRP) and Intermountain West (IMW) state geological survey earthquake research programs to address the need for effective communication and collaboration in applied earthquake-hazard research in the region. The 2021 meeting was held virtually, over the Zoom videoconferencing platform, due to the COVID-19 pandemic. Emily Kleber (Utah Geological Survey [UGS]) called the 2021 Virtual BRPEWG meeting to order at 9:00 a.m. Mountain Standard Time.

BRPEWG Purpose and Goals

- Establish and coordinate earthquake-hazard research agenda in the Basin and Range Province (BRP), especially collaborative work across state lines.
- Provide a space and resource for Basin and Range states to determine and discuss technical issues related to fault behavior in the Basin and Range Province.
- Share best practices and reports of ongoing work in research programs in the Basin and Range.
- Identify and prioritize BRP cross-border Quaternary faults and future paleoseismic investigations to attribute fault characteristics in Basin and Range state fault databases and the USGS *Quaternary Fault and Fold Database of the United States*.

TECHNICAL PRESENTATIONS

Updates from the U.S. Geological Survey

- Welcome, Overview, Technical Overview, and Review of Last Year: Emily Kleber, Utah Geological Survey
- U.S. Geological Survey (USGS) Updates
 - Update from Chris DuRoss, Intermountain West Regional Coordinator, USGS
 - Update on National Seismic Hazard Maps (NSHM) from Alex Hatem, USGS
 - Questions and Answers, Discussion

Updates from Basin and Range State Geologic Surveys

Five minute “lightning talks” were given by Basin and Range states on any earthquake geology updates. The talks lasted five minutes and contained three slides each. Lightning talks were given by representatives from Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.

Spring 2020 Intermountain West (IMW) Earthquakes

Presentations were given highlighting three moderate to large earthquakes that occurred in the spring of 2020 in the IMW.

- Summary of the 18 March 2020, M 5.7 Magna, Utah, Earthquake: Emily Kleber, Utah Geological Survey
- Summary of the 31 March 2020, M 6.5 Stanley, Idaho, Earthquake: Zach Lifton, Idaho Geological Survey
- Summary of the 15 May 2020, M 6.5 Monte Cristo, Nevada, Earthquake: Rich Koehler, Nevada Bureau of Mines and Geology/University of Nevada, Reno

DISCUSSION ITEMS

Group Discussion

- Scientific response
 - State survey and USGS response process
- Seismic hazard and geologic record of moderate-magnitude earthquakes (i.e., no scarps)
 - Moderate earthquakes in NSHM as sources
- Earthquake Response Schema Discussion
 - Chris DuRoss (USGS) shared a sample schema, based on what was used for the July 2019 Ridgecrest, California, earthquake.
 - Discussion on forming a subcommittee to develop a shared earthquake response schema for use in Basin and Range states.

WORKING GROUP PRODUCTS AND RELATED DATA

The final agenda and this summary document are available on the BRPEWG web page at <https://geology.utah.gov/hazards/info/workshops/working-groups/basin-and-range-earthquakes/>.

MEETING ATTENDANCE

Working Group Members (* Speaker)

Jeri Young Ben-Horin*	Arizona Geological Survey
Steve Bowman	Utah Geological Survey
Seth Dee	Nevada Bureau of Mines and Geology
Chris DuRoss*	U.S. Geological Survey, Earthquake Hazards Program
Yann Gavillot*	Montana Bureau of Mines and Geology
Ryan Gold*	U.S. Geological Survey, Earthquake Hazards Program, IMW Coordinator
Adam Hiscock	Utah Geological Survey (BRPEWG UGS Liaison)
Emily Kleber*	Utah Geological Survey (BRPEWG Chair)
Rich Koehler*	Nevada Bureau of Mines and Geology
Zach Lifton*	Idaho Geological Survey
Matthew Morgan*	Colorado Geological Survey
Lucille Piety	U.S. Bureau of Reclamation
Gordon Seitz*	California Geological Survey
Seth Wittke*	Wyoming State Geological Survey

Guests

Aamir Ali	University of Haripur
Ruth Andresen	Public
Darlene Batatian	Terracon Consultants, Inc.
Scott Bennett	U.S. Geological Survey
Glenda Besana-Ostman	U.S. Bureau of Reclamation
Emilio Bono	Public
Jochen Braunmiller	University of South Florida
Rich Briggs	U.S. Geological Survey
Relu Burlacu	University of Utah Seismograph Stations
Jessica Castleton	Utah Geological Survey
Camille Collett	U.S. Geological Survey
John Crofts	Utah Division of Emergency Management
Carl Ege	Utah Division of Water Resources
Colleen Elliott	Montana Bureau of Mines and Geology
Yann Gavillot	Montana Bureau of Mines and Geology
Rich Giraud	Utah Geological Survey
Julia Grim	Natural Resources Conservation Service
Christian Hardwick	Utah Geological Survey
Nicole Hastings	Brigham Young University
Alex Hatem*	U.S. Geological Survey
Doug Hawkes	Applied Geotechnical Engineering Consultants, Inc.
Michael Hylland	Utah Geological Survey
Susanne Janecke	Utah State University
Ian Pierce	University of Nevada, Reno
Lee Liberty	Boise State University
Ian Madin	Oregon Department of Geology and Mineral Industries
Abby Mangum	Brigham Young University
James Mauch	Wyoming State Geological Survey
Greg McDonald	Utah Geological Survey
Sean McGowan	Federal Emergency Management Agency – Region 8
Adam McKean	Utah Geological Survey
Matthew Morgan	Colorado Geological Survey
Sylvia Nicovich	U.S. Bureau of Reclamation
Taylor Nordquist	Applied Geotechnical, Inc.
Kristine Pankow	University of Utah Seismograph Stations
James Pechmann	University of Utah Seismograph Stations
Kristopher Powell	Terracon Consultants, Inc.
Tomsen Reed	Gerhart Cole, Inc.
Nadine Reitman	U.S. Geological Survey
Brooklyn Smout	Utah Geological Survey
Mike Stickney	Montana Bureau of Mines and Geology
Jacob Thacker	New Mexico Bureau of Geology and Mineral Resources
Jessica Thompson Jobe	U.S. Geological Survey
Ana Vargo	Natural Resources Conservation Service
Casey Webb	Southern Utah University
Paul Wetmore	University of South Florida
Grant Willis	Utah Geological Survey
Ivan Wong	Lettis Consultants International

Cianna Wyshnytzky Natural Resources Conservation Service
Judy Zachariasen California Geological Survey
Mark Zellman BGC Engineering