

TECHNICAL PROGRAM

2020 National Earthquake Conference

March 4-6, 2020, San Diego

Version Date: March 3, 2020

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SCHEDULE AT-A-GLANCE

2020 National Earthquake Conference

March 4-6, 2020, San Diego

WEDNESDAY MARCH 4

Morning Plenary Sessions

Time	Session Name	Session #	Room
8:30 – 9:00am	Welcome to the National Earthquake Conference & EERI Annual Meeting	P0	Grande Ballroom B&C
9:00 – 10:00am	The San Diego Earthquake Scenario and its Vision for a Seismically Resilient San Diego by 2050	P1	Grande Ballroom B&C
10:00 – 11:00am	Functional Recovery: What it Means to Design for Community Resilience, <i>EERI Distinguished Lecture</i>	P2	Grande Ballroom B&C

Networking Break, 11:00am – 12:00pm, Nautilus Foyer

Lunch Session, 12:00pm – 2:00pm, Grande Ballroom B&C

Time	Session Name	Session #	Room
12:30pm – 1:30pm	What is an Earthquake Program and How Do We Work Together Better to Reduce Seismic Risk?	P3	Grande Ballroom B&C

Concurrent Sessions

Time	Session Name	Session #	Room
2:00pm – 3:30pm	Designing the Earthquake & Geologic Hazards for the San Diego Earthquake Scenario	1A	Nautilus 1
	Leveraging Newly Available Tools, Guidance and Applications for Seismic Risk Reduction and Recovery	1B	Nautilus 2
	Seismic Sorcery: Obtaining Funds to Perform Mitigation Magic	1C	Nautilus 3
	Leadership in the Wake of Disaster	1D	Nautilus 4
	Findings from the 2018 M7.1 Anchorage Alaska Earthquake	1E	Marina 6
	How Do Hospitals Respond to Earthquakes?	1F	Nautilus 5

Networking Break, 3:30pm – 4:00pm, Nautilus Foyer

Time	Session Name	Session #	Room
4:00pm – 5:30pm	Pre-earthquake Response: Closing the Critical Data Gap and Preparing for Large Earthquakes	2A	Nautilus 1
	Infrastructure and Building Vulnerabilities in San Diego/Tijuana	2B	Nautilus 2
	Strengths and Opportunities for Earthquake Clearinghouses	2C	Marina 6
	Mitigating in the Real World: Tackling URMs in Portland, Seattle, and Salt Lake City	2D	Nautilus 4
	FEMA Guidance on Post-Disaster Building Safety Evaluations	2E	Nautilus 5
	Preliminary Reconnaissance Findings from the 2020 Puerto Rico Earthquake Sequence	2F	Nautilus 3

Welcome & Networking Reception, 5:30pm – 7:00pm, Nautilus and Grande Foyers

THURSDAY MARCH 5

Morning Plenary Sessions

Time	Session Name	Session #	Room
9:00 – 10:15am	From Earthquakes Big to Small: How to Frame the Earthquake Hazard Conversation, <i>SSA Joyner and Invited Lectures</i>	P4	Grande Ballroom B&C
10:15 – 11:00am	Local Perspectives from the 2020 Puerto Rico Earthquake Sequence	P5	Grande Ballroom B&C

Networking Break, 11:00am – 12:00pm, Nautilus Foyer

Lunch Session, 12:00pm – 2:00pm, Grande Ballroom B&C

Time	Session Name	Session #	Room
12:30pm – 1:30pm	EERI Awards Ceremony	P6	Grande Ballroom B&C

Concurrent Sessions

Time	Session Name	Session #	Room
2:00pm – 3:30pm	What's New & What's Needed: National Seismic Hazard Model(s)	3A	Nautilus 1
	Advanced Tools in Earthquake Engineering for Processing, Computation, Simulation, and Visualization	3B	Nautilus 2
	San Diego Seismic Resilience – Stakeholder Insight Panel	3C	Nautilus 3
	Beyond California: Disaster Resilience Planning from Across the Nation	3D	Nautilus 4
	Ridgecrest Earthquake Sequence: Science Findings and Lessons	3E	Nautilus 5

Networking Break, 3:30pm – 4:00pm, Nautilus Foyer

Time	Session Name	Session #	Room
4:00pm – 5:30pm	Development of NIST-FEMA Recommendations for Achieving Functional Recovery	4A	Nautilus 2
	Development and Key Changes of the 2020 NEHRP Recommended Seismic Provisions for Buildings and Other Structures	4B	Nautilus 1
	Shut Down Impacts: Can They Be Avoided or Reduced?	4C	Nautilus 3
	Achieving a Seismically Resilient San Diego by 2050: A Collaborative Workshop	4D	Nautilus 4
	Ridgecrest Earthquake Sequence: Engineering Findings and Lessons	4E	Nautilus 5

Lightning Sessions

Time	Session Name	Session #	Room
5:30pm – 6:00pm	Lightning Session #1	N/A	Nautilus 1
	Lightning Session #2	N/A	Nautilus 3
	Lightning Session #3: Ridgecrest Earthquake Sequence	N/A	Nautilus 5

Poster Session & Reception, 6:00pm – 7:30pm, Grande Ballroom A and Grande Foyer

Morning Plenary Sessions

Time	Session Name	Session #	Room
9:00am – 10:30am	Assessing and Communicating Hazards: From Early Warning to Aftershocks	5A	Nautilus 1
	Progress and Challenges in Utilizing Simulated Ground Motions for Engineering Practice	5B	Nautilus 2
	Developing Effective Outreach Tools and Strategies	5C	Nautilus 3
	From Expectation to Reality: Understanding and Leveraging Public Perceptions to Improve Earthquake Resilience	5D	Nautilus 4
	EERI Learning from Earthquakes: Resilience Lessons from Reconnaissance Over Time	5E	Nautilus 5

Networking Break, 10:30am – 11:00am, Nautilus Foyer

Concluding Plenary Session

Time	Session Name	Session #	Room
11:00am – 12:15pm	Local Perspectives from the Ridgecrest Earthquake Sequence	P7	Grande Ballroom B&C
12:15pm – 12:30pm	Closing Thoughts and Call to Action	P7	Grande Ballroom B&C

Lunch Session (tickets required)

Lunch, 1:00pm – 2:30pm, Grande Ballroom B&C

Time	Session Name	Session #	Room
1:30pm – 2:30pm	SDC Award Ceremony with Presentations by EERI-FEMA NEHRP Graduate Fellows	P8	Grande Ballroom B&C

DETAILED PROGRAM & SESSIONS

2020 National Earthquake Conference

March 4-6, 2020, San Diego

MONDAY MARCH 2

PRECONFERENCE EVENTS

EERI Undergraduate Seismic Design Competition (open), 8:00am – 6:00pm, Grande Ballroom A

TUESDAY MARCH 3

PRECONFERENCE EVENTS

EERI Undergraduate Seismic Design Competition (open), 10:00am – 8:00pm, Grande Ballroom A, Nautilus 1, 2, 3

PRECONFERENCE WORKSHOPS

CONVERGE Extreme Events Research Training Modules Workshop, 9:00am – 12:00pm, Nautilus 4

This workshop will build capacity for post-earthquake reconnaissance participants and hazards and disaster researchers in the areas of social vulnerability, cultural competence, mental health, and Institutional Review Board (IRB) procedures for research involving human participants. The workshop will be presented by Haorui Wu (assistant professor in the School of Social Work, Dalhousie University) and Rachel Adams (postdoctoral researcher at the Natural Hazards Center, University of Colorado Boulder). More information about the CONVERGE Training Modules is available here: <https://converge.colorado.edu/training-modules>.

Learning from Earthquakes Reconnaissance Training, 1:00 – 3:00pm, Nautilus 4

This workshop will provide an overview of EERI's Learning From Earthquakes (LFE) Program and the Virtual Earthquake Reconnaissance Team. Participants will receive training on EERI's field data collection tools and virtual reconnaissance methods. EERI members who complete this training will be well-positioned to contribute effectively to reconnaissance efforts following future earthquakes.

PRECONFERENCE TOUR

UC San Diego Laboratory and Campus Tour, 9:30am – 3:30pm, *Ticket Required*

This tour will visit facilities at the University of California, San Diego. The first destination is the NHERI @ UCSD Large High-Performance Outdoor Shake Table (nheri.ucsd.edu/), followed by a trip to the main university campus to tour the Charles Lee Powell Laboratories (structures.ucsd.edu/research/laboratories).

WEDNESDAY MARCH 4

EERI Seismic Design Competition: Shaking Day, 8:30am – 5:20pm, Grande Ballroom A

MORNING PLENARY SESSIONS

Welcome to the National Earthquake Conference & EERI Annual Meeting

8:30 – 9:00am, Plenary Session P0

Location: Grande Ballroom B&C

<i>Speaker</i>	<i>Affiliation</i>
Leslie Chapman-Henderson	President and CEO, Federal Alliance for Safe Homes, Inc. (FLASH)
Gary S. Johnston	Chief Resilience Officer, San Diego County Office of Emergency Services
Laurie Johnson	Laurie Johnson Consulting and President of the Earthquake Engineering Research Institute (EERI)
Howard Harary	Director of the Engineering Laboratory, National Institute of Standards and Technology (NIST), and 2020 NEC Honorary Chair

The San Diego Earthquake Scenario and its Vision for a Seismically Resilient San Diego by 2050

9:00 – 10:00am, Plenary Session P1

Location: Grande Ballroom B&C

For the last five years, a series of experts and community stakeholders have developed a scenario for a possible earthquake on the Rose Canyon Fault Zone in San Diego and considered its impacts on the community. This session will introduce the San Diego-Tijuana Earthquake Scenario earthquake, major findings of this study, and the scenario's expected losses. The team will also present their vision for a seismically resilient San Diego by 2050. They will also discuss the possibilities and opportunities for action, particularly by local leaders who will be critical to seismic planning and mitigation success.

Moderator: Glenn Pomeroy, California Earthquake Authority

<i>Speaker</i>	<i>Affiliation</i>
Jorge Meneses	Principal Geotechnical Engineer, RMA Group, Inc. and EERI San Diego Chapter President
Stephen Rea	Assistant Director of Office of Emergency Services, San Diego County
Afsaneh Ahmadi	Chief Building Official, City of San Diego
Mona Freels	Emergency Operations Services Manager, San Diego Gas & Electric (SDG&E)
David Harrison	Assistant Director of Emergency Services, City of Carlsbad

Functional Recovery: What it Means to Design for Community Resilience , *EERI Distinguished Lecture*

10:00 – 11:00am, Plenary Session P2

Location: Grande Ballroom B&C

Speaker: David Bonowitz, Structural Engineer

This lecture will focus on the emerging concept of functional recovery as a basis for earthquake-resistant design. Designing buildings and infrastructure for limited downtime – or an acceptably quick functional recovery – is not new, but it is receiving new attention through state and federal legislation, and showing new feasibility through research and technology. Most intriguing is the recognition that designing for functional recovery is a necessary tool for achieving community-wide earthquake resilience. And if progress is to be measured at the community level, functional recovery will also be a matter of public policy. The lecture will look at the roles EERI members can play in shaping this thinking into design practice with four sets of questions: definitional, technical, policy, and implementation.

Moderator: Laurie Johnson, Laurie Johnson Consulting and EERI President

Networking Break, 11:00am – 12:00pm, Nautilus Foyer

LUNCH

12:00 – 2:00pm

Location: Grande Ballroom B&C

What is an Earthquake Program and How Do We Work Together Better to Reduce Seismic Risk?

12:30 – 1:30pm, Plenary Session P3

Location: Grande Ballroom B&C

Earthquake programs exist across the nation in states with seismic hazard. These programs vary in scope and scale, yet all aim to help their state/territory advance earthquake risk reduction. This session will explain what an earthquake program is and key partners that earthquake program managers work with. The discussion will describe how these programs engage critical audiences, like the public, and highlight what earthquake program managers need from the scientific and engineering community to advance seismic mitigation and planning. The session will end with the presentation of the WSSPC National Awards of Excellence.

Moderator: Maximilian Dixon, Washington State Emergency Management Division

Presentation Title	Speaker	Affiliation
What Is an Earthquake Program and Who Do Earthquake Program Managers Work With to Help Save Lives?	Maximilian Dixon	Washington State Emergency Management Division
Informed Decision-Making: What Do Emergency Managers and Land Use Planners Need From Engineers and Scientists?	Amanda Siok	FEMA Region 10
Cascadia Rising 2022	Robert Ezelle	Washington State Emergency Management Division
Whole Community Integration - We're In It Together!	Mona Bontty	California Governor's Office of Emergency Services
Let's Work Together!	Maximilian Dixon	Washington State Emergency Management Division
WSSPC National Awards of Excellence	Matthew Wall	Western States Seismic Policy Council

EARLY AFTERNOON CONCURRENT SESSIONS

Designing the Earthquake & Geologic Hazards for the San Diego Earthquake Scenario

2:00 – 3:30pm, Concurrent Session 1A

Location: Nautilus 1

This session will showcase the technical work of the San Diego Scenario's "Earth Science" Working Group. The session will describe the San Diego seismic fault zone, the selection of the scenario earthquake, and the associated shaking, ground failure, and secondary hazards.

Moderator: Diane Murbach, Murbach Geotech

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Paleoseismic History, Scenario Earthquake & Surface Fault Rupture	Tom Rockwell	San Diego State University
USGS Scenario ShakeMaps & Simulation	Ken Hudnut	United States Geological Survey
Scenario Liquefaction and Landsliding	Jim Gingery	Hayward Baker
Scenario Tsunami from Submarine Landslide	Mark Legg	Legg Geophysical, Inc.

Leveraging Newly Available Tools and Guidance for Seismic Risk Reduction and Recovery

2:00 – 3:30pm, Concurrent Session 1B

Location: Nautilus 2

This session will focus on several recent applied research projects managed by the Applied Technology Council (ATC) that developed tools and guidance focused on seismic risk mitigation and recovery. The session will cover topics relevant to a broad audience of professionals, including a discussion about the City of San Francisco's use of performance-based engineering information in its policymaking, an overview of a guide for assessing and repairing earthquake-damaged wood-frame houses, and an introduction to a guide for homeowners about protecting their families and homes from earthquakes and responding afterwards.

Moderator: Justin Moresco, Applied Technology Council

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
FEMA P58-7: Building the Performance You Need	David Mar	Mar Structural Design
ATC-119-1: Application of FEMA P-58 for City of San Francisco's Tall Building Safety Strategy	Ayse Hortacsu	Applied Technology Council
FEMA P-2018: Seismic Evaluation of Older Concrete Buildings for Collapse Potential	William Holmes	Rutherford + Chekene
CEA-EDA-02: Earthquake Damage Assessment and Repair Guidelines for Residential Wood-Frame Buildings	Morgan Griffith	Exponent, Inc.
FEMA P-530: Earthquake Safety at Home: Prepare, Protect, Survive, Recover, Repair	Colin Blaney	Buehler Engineering

Seismic Sorcery: Obtaining Funds to Perform Mitigation Magic

2:00 – 3:30pm, Concurrent Session 1C

Location: Nautilus 3

This interactive session will share the sorcery of funding philosophers and seismic sages enabling seismic crusaders to fund the earthquake mitigation and planning projects of their dreams. While navigating and applying for various funding opportunities can seem daunting, this session will demystify federal funding sources, including: the National Earthquake Hazards Reduction Program, the National Earthquake Technical Assistance Program, Disaster Recovery and Reform Act, the Hazard Mitigation Grant Program, and the upcoming Building Resilient Infrastructure and Communities Program. Panelists will also discuss case studies of successfully funded earthquake mitigation projects including: unreinforced masonry retrofits, earthquake risk awareness campaigns, school retrofits, and more. Some of these projects leveraged multiple funding sources, including economic revitalization dollars.

Moderator: Michael Conway, Arizona Geological Survey

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Demystifying Federal Funding	Amanda Siok	FEMA Region X
Seismic Sorcery in Port Townsend: Adding a dash of mitigation to economic revitalization	Tim Cook	Washington Emergency Management Division
The Nuts & Bolts of Financing Earthquake Retrofit Projects	Brad Bartholomew	Utah Division of Emergency Management

Leadership in the Wake of Disaster

2:00 – 3:30pm, Concurrent Session 1D

Location: Nautilus 4

Inevitably following disaster, a community must come together, pick up the pieces, and find a path forward. Crucial in this process are the leaders who unite and guide residents toward economic, social, and physical recovery. Civic leaders from around the country present riveting accounts of their communities' response to the immediate impacts of disasters and the healing process that follows.

Moderator: Anna Lang, Zylent

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Responding to the Ridgecrest Earthquake Sequence	Jed McLaughlin	Chief of Police, Ridgecrest
Best Recoveries Built on Relationships and Planning Ahead	Linda Langston	National Academy of Sciences & National Association of Counties
Responding to Alaska's 7.1 Earthquake, Nov. 30, 2018 to Present	William (Bill) D. Falsey	Municipal Manager, City of Anchorage

Findings from the 2018 M7.1 Anchorage Alaska Earthquake

2:00 – 3:30pm, Concurrent Session 1E

Location: Marina 6

This session will summarize major outcomes in earth science, geotechnical engineering, and structural engineering from the 2019 Symposium on the 2018 M7.1 Anchorage Earthquake. Presentations will include lessons for practice and future research directions. This session is supported by the National Science Foundation under Award No. CMMI-1938428 and by the USGS under award number G19AC00299. Any opinions, findings, and conclusions or recommendations expressed are those of the speakers and do not necessarily reflect the views of the NSF or the USGS.

Moderator: Dan Belanger, Alaska Division of Homeland Security and Emergency Management

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Major Lessons for Structural Engineering Practice	Sterling Strait	Alyeska Pipeline Service Company
Major Lessons for Geotechnical Engineering Practice	Jessica Feenstra	Golder
Future Directions for Structural Engineering Research	Wael Hassan	University of Alaska, Anchorage
Future Directions for Geotechnical Engineering Research	Rich Koehler	University of Nevada
Future Directions for Seismological Research	Natalia Ruppert	Alaska Earthquake Center
Future Directions for Geological Research	Eric Thompson	USGS

How Do Hospitals Respond to Earthquakes?

2:00 – 3:30pm, Concurrent Session 1F

Location: Nautilus 5

This session aims to answer the question posed in the title. Speakers will draw from multiple point-of-views, including engineering practice, emergency management policy, and onsite facility operations. Case studies will include Ridgecrest Regional, Naval Medical Center San Diego, and Stanford Healthcare.

Moderator: Derek Skolnik, Kinemetrics, Inc.

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Rapid Evaluation and Assessment Program (REAP) for Hospitals	Dave Swanson	Reid Middleton, Inc.
Emergency Management's Role in Continued Operations at Stanford Health Care	Laura Jackson	Stanford Health Care
Ridgecrest Regional Hospital Post-Earthquake Assessment after the 2019 M6.4 and M7.1 Earthquakes	Daniel Zepeda	Degenkolb Engineers
How the 1M+ SF Naval Medical Center San Diego is prepared to respond to Earthquakes	Josh Hall	Navy Medical Center, San Diego

Networking Break, 3:30-4:00pm, Nautilus Foyer

LATE AFTERNOON CONCURRENT SESSIONS

Pre-earthquake Response: Closing the Critical Data Gap and Preparing for Large Earthquakes

4:00 – 5:30pm, Concurrent Session 2A

Location: Nautilus 1

What should we be doing to prepare for the next large earthquake? How should we prepare to gather those data that will help answer critical questions about earthquakes, hazards, and risk?

Moderators: Mark Benthien, Southern California Earthquake Center, and Keith Knudsen, USGS

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Lessons Learned from Parkfield that Should Be Applied to Future Studies	Andrew Michael	USGS
Pre-Earthquake Preparation Processes	Yehuda Ben-Zion	University of Southern California
Preparing for Major Earthquakes by Using Small Magnitude Events	Albert Kottke	PG&E

Infrastructure and Building Vulnerabilities in San Diego and Tijuana

4:00 - 5:30pm, Concurrent Session 2B

Location: Nautilus 2

This session will take a closer look at the impacts to buildings and lifeline infrastructure in the San Diego and Tijuana areas as a result of the geologic hazards in the San Diego Scenario. This session will use an engineering perspective to better describe the studies that helped to identify expected impacts, and discuss opportunities for mitigation. This session will also include perspectives from studies that took place in Tijuana as a result of the scenario effort.

Moderator: Alvaro Celestino, Degenkolb Engineers

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Overview of San Diego Scenario Engineering Impacts and Findings	Anthony Court	AB Court & Associates
Assessment of Impacts to Tijuana Due to the Rose Canyon M6.9 Scenario Earthquake	Mario Gonzalez-Duran and Roberto Ruiz-Salas	Universidad Autónoma de Baja California, Tijuana, Baja California, México and Kimley-Horn
How Vulnerable Are We? A Look into the Existing San Diego Building Stock	Peter Maloney	Degenkolb Engineers

Strengths and Opportunities for Earthquake Clearinghouses

4:00 - 5:30pm, Concurrent Session 2C

Location: Marina 6

Post-earthquake clearinghouses play an important role in earthquake reconnaissance by facilitating and coordinating field investigation efforts and disseminating information through daily briefings and virtual clearinghouse websites. Conveners of two recent clearinghouses for the 2018 M7.1 Anchorage Earthquake and 2019 Ridgecrest Earthquake Sequence will describe lessons learned and opportunities for future deployments, alongside an emergency manager who recently created and exercised a new Clearinghouse activation plan for the state of Idaho. Federal efforts focused on planning for clearinghouses will also be shared. Panel discussion will be used to explore opportunities and challenges for launching clearinghouses after future U.S. earthquakes.

Moderator: Matthew Wall, Western States Seismic Policy Council

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
2018 M7.1 Anchorage Earthquake Clearinghouse Lessons Learned and Opportunities	Maggie Ortiz-Millan	EERI
2019 Plan and Exercise of the Idaho Clearinghouse Plan & After Action Findings	Susan Cleverly	Idaho OEM
2019 Ridgecrest Earthquake Sequence Clearinghouse Lessons Learned and Opportunities	Cindy Pridmore	CA Geological Survey
National Efforts for NEHRP Clearinghouse Planning	Ken Hudnut	USGS

Mitigating in the Real World: Tackling URMs in Portland, Seattle, and Salt Lake City

4:00 - 5:30pm, Concurrent Session 2D

Location: Nautilus 4

It is well known that unreinforced masonry (URM) buildings are seismically vulnerable and should be retrofitted or replaced. But achieving that goal doesn't stop with an engineer's recommendation. Policies intending to improve seismic safety can unintentionally overlook the social impacts and economic challenges of such legislation on the very communities they're intended to protect. This session invites panelists from Portland, Seattle, and Salt Lake City to discuss the challenges, successes, and lessons learned for implementing seismic safety legislation and programs for URM buildings.

Moderator: Anna Lang, Zylent and Anne Hulse, Stanford University

<i>Speaker</i>	<i>Affiliation</i>
Jonna Papaefthimiou	Portland Bureau of Emergency Management
Audrey Pierce	Program Manager, Salt Lake City Fix the Bricks, and Critical Infrastructure Liaison, Salt Lake City Emergency Management
Nancy H. Devine	City of Seattle, Department of Construction and Inspections

FEMA Guidance on Post-Disaster Building Safety Evaluations

4:00 - 5:30pm, Concurrent Session 2E

Location: Nautilus 5

The United States had a seismically active year, and earthquake engineers were ready to respond! But do you know how and when you can help? In November 2019, FEMA published *Post-disaster Building Safety Evaluation Guidance: Report on the Current State of Practice including Recommendations Related to Structural and Nonstructural Safety and Habitability* (FEMA P-2055), as required by the Disaster Recovery Reform Act of 2018. This session will discuss safety evaluations in the recent 2020 Puerto Rico Earthquake Sequence, generally address community needs following an earthquake, summarize best practice guideline documents for conducting safety evaluations, and identify recommended improvements, such as development of guidance for habitability evaluations. The presenters will also showcase the new proposed tools for efficient program management including qualifications of team members conducting safety evaluations.

Moderator: Ayse Hortacsu, Applied Technology Council

Speaker	Affiliation
Ayse Hortacsu	Applied Technology Council
Andrew Herseth	Federal Emergency Management Agency
Bret Lizundia	Rutherford + Chekene

Preliminary Reconnaissance Findings from the 2020 Puerto Rico Earthquake Sequence

4:00 - 5:30pm, Concurrent Session 2F

Location: Nautilus 3

This session will provide an overview of findings from initial reconnaissance studies following the January 7, 2020 M6.4 Earthquake and aftershocks.

Moderator: Mike Blanpied, USGS

Presentation Title	Speaker	Affiliation
Event Summary and Aftershocks Sequence	Nicholas van der Elst	USGS
Ground Failure Observations	Eric Thompson	USGS
Structural Impacts	Eduardo Miranda	Stanford University
FEMA Pre-Mitigation Assessment Team Observations	Drew Herseth	FEMA
Building Tagging	Jose Sanchez	Simpson Gumpertz & Heger

Welcome & Networking Reception, 5:30pm – 7:00pm, Nautilus and Grande Foyers

THURSDAY MARCH 5

MORNING PLENARY SESSIONS

From Earthquakes Big to Small: How to Frame the Earthquake Hazard Conversation

9:00-10:15am, Plenary Session P4

Location: Grande Ballroom B&C

Moderator: Heidi Tremayne, Earthquake Engineering Research Institute

Speaker	Affiliation
Julian Bommer	Imperial College London
Lucy Jones	Dr. Lucy Jones Center for Science and Society

Planning and mitigating for earthquakes often consider earthquakes with large magnitudes with extensive damage distribution and far-reaching societal impacts. However, talking about earthquakes only at such large scales to the public, policymakers, and critical decision-makers can affect how they perceive risk and influence the actions they take to prevent it. This session will explore the science of smaller earthquakes and consider how to frame conversations about earthquake risk to consider earthquakes of various scales so that they motivate action. This session will feature presentations by the EERI/SSA Joyner Lecture by Senior Research Investigator at Imperial College London, Julian J. Bommer, and Lucy Jones, founder of the Dr. Lucy Jones Center for Science and Society, followed by a facilitated discussion about how action can be expedited by talking about earthquakes at various scales.

Dr. Julian Bommer will discuss how the occurrence of some low-magnitude earthquakes in recent years has been the cause of unexpected levels of damage and particularly by the heightened concern regarding earthquakes of anthropogenic origin. The lecture begins by re-visiting the often misunderstood rationale behind the exclusion of smaller magnitude earthquakes from probabilistic seismic hazard analysis as being related to the risk posed by such events. A number of case histories of small magnitude events reported having caused damage are then reviewed, highlighting in each case the specific factors contributing to the impact—and in some cases arguing that the impact may have been exaggerated. This is followed by a global analysis of small-to-moderate magnitude earthquakes to ascertain the likelihood of these resulting in damage and/or injury. As well as looking at the smallest magnitude earthquakes that have caused structural damage, the question of the smallest magnitudes required to trigger liquefaction is also addressed. The lecture concludes with some insights regarding if and when smaller earthquakes should be a concern as well as discussing the challenges associated with modeling the resulting hazard and risk that such events can pose.

Dr. Lucy Jones will expand upon the scientific basis for consideration of small earthquakes by considering what we can learn from risk perception science and how that should impact how we speak about both large and small earthquakes. Disasters can be on a personal scale, for those whose home or livelihood are lost, or on a societal scale when infrastructure damages result in cascading impacts that interrupt the economic prosperity of a community. They create different motivators for action at both the personal and societal levels.

Local Perspectives from the 2020 Puerto Rico Earthquake Sequence

10:15-11:00am, Plenary Session P5

Location: Grande Ballroom B&C

This session will provide an opportunity to hear from colleagues from Puerto Rico about their roles as scientific and engineering experts involved in the earthquake response.

Moderator: Laurie Johnson, Laurie Johnson Consulting and EERI President

Speaker	Affiliation
Elizabeth Vanacore	Puerto Rico Seismic Network
Jose Antonio Martinez Cruzado	UPR Mayaguez
Marla Perez Lugo	RISE Network

Networking Break, 11:00am – 12:00pm, Nautilus Foyer

LUNCH

12:00 – 2:00pm

Location: Grande Ballroom B&C

EERI Awards Ceremony

12:30 – 1:30pm, Plenary Session P6

This session will showcase honorees of the Earthquake Engineering Research Institute.

Moderator: Laurie Johnson, Laurie Johnson Consulting and EERI President

Award	Awardee	Affiliation
George W. Housner Medal	Jack P. Moehle	University of California, Berkeley
The Alfred E. Alquist Special Recognition Medal	Anthony F. Shakal	California Geological Survey (retired)
EERI Honorary Membership	William J. Hall	University of Illinois at Urbana-Champaign
EERI Honorary Membership	Anne Kiremidjian	Stanford University
Shah Family Innovation Prize	Carlos Molina-Hutt	University Of British Columbia
Younger Member Award	Guillermo Diaz-Fanas	WSP USA
Younger Member Award	Erica Fischer	Oregon State University
EERI/FEMA NEHRP Graduate Fellowship	Andrew J. Makdisi	University of Washington
EERI/FEMA NEHRP Graduate Fellowship	Sarah Wichman	University of Washington
Outstanding Paper Award for Earthquake Spectra	Anastasios Sextos et al.	University of Bristol, UK
Graduate Outstanding Student Paper Award	Ganyu Teng	Stanford University
Undergraduate Outstanding Student Paper Award	Omar Issa	University of California, Los Angeles

EARLY AFTERNOON CONCURRENT SESSIONS

What's New & What's Needed: National Seismic Hazard Model(s)

2:00 – 3:30pm, Concurrent Session 3A

Location: Nautilus 1

This session will showcase recent changes and upcoming changes to the National Seismic Hazard Models, and seek feedback on improved use & effectiveness.

Moderator: John Anderson, University of Nevada, Reno

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Progress in Applying the Latest Science to Assess Earthquake Hazards Across the Country	Mark Peterson	USGS
Quantifying Uncertainty in National Seismic Hazard Models	Peter Powers	USGS
Project 17 and How the National Seismic Hazard Model has Responded to the Recommendations of that Project	Nicolas Luco and Sanaz Rezaeian	USGS
Enhancing USGS NSHM Data for Insurance Risk Scoring	Taronne Tabucchi	Guy Carpenter
Implementation of Basin Effects in Seismic Hazard of the Greater Seattle Region	Melanie Walling	GeoEngineers, Inc.

Advanced Tools in Earthquake Engineering for Processing, Computation, Simulation, and Visualization

2:00 – 3:30pm, Concurrent Session 3B

Location: Nautilus 2

Development of new tools and techniques, and transformation of existing tools and techniques are essential for progression in any field. This session will focus on a broad range of innovative tools and techniques related to computation, automation, simulation, and visualization in the area of earthquake engineering. The session will also address how these tools are expected to advance into the future and what impact each tool will have on the engineering practice in the future.

Moderator: Sissy Nikolaou, WSP USA

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
NGA Automated Record Processing Routine	Tim Ancheta	Risk Management Solutions
EQSIM – A High Performance Computational Framework for Fault-to-Structure Simulations on Massively Parallel Computer Platforms	Floriana Petrone	Lawrence Berkeley National Laboratory & University of Nevada
SeismoVLAB: A Parallel Object-Oriented Virtual Laboratory for Mesoscale Seismic Wave Propagation Simulations	Domniki Asimaki	California Institute of Technology
"ShakeMap®" for Buildings	Derek Skolnik	Kinematics, Inc.
Leveraging ArcGIS Mapping: Investigation of Concrete Building Damage after 2017 Mexico Earthquake	Anahid Behrouzi, Alejandra Bravo, Nicholas Slavin	California Polytechnic State University - San Luis Obispo

San Diego Seismic Resilience – Stakeholder Insight Panel

2:00 – 3:30pm, Concurrent Session 3C

Location: Nautilus 3

Diverse stakeholders from the San Diego region will discuss impacts from the scenario on their own infrastructure or systems, describe their organization's seismic mitigation and planning accomplishments, and compare them to their other hazard planning efforts. Panelists will also explore challenges and opportunities in mitigating their seismic risk and achieving a seismically resilient San Diego by 2050.

Moderator: Gary Johnson, San Diego County of Emergency Services

<i>Speaker</i>	<i>Affiliation</i>
David Harrison	Assistant Director of Emergency Services, City of Carlsbad
Ryan DeHart	Emergency Services Coordinator, County of San Diego Office of Emergency Services
Clint Welch	Director of Aviation Security and Public Safety for the San Diego Airport
Ron LaPlante	Senior Structural Engineer/Codes & Standards, Division of the State Architect
Bill White	Manger, Security and Emergency Planning, City of San Diego, Public Utilities Department
Jim Fisher	Operations and Maintenance Director, San Diego County Water Authority
Matt Brown	Port of San Diego – Homeland Security Program Manager, San Diego Unified Port District
Brian Souerhage	Commander, Third Fleet, United States Navy

Beyond California: Disaster Resilience Planning from Across the Nation

2:00 – 3:30pm, Concurrent Session 3D

Location: Nautilus 4

To improve seismic resilience, we must draw on lessons from beyond our “own backyard.” Communities are challenged to prepare for and withstand a wide range of disasters by identifying and executing context-dependent strategies. This session explores unique approaches to building resilience in communities through all levels of government and volunteer efforts. Speakers will highlight distinctive processes that enable success, including multi-hazard risk evaluation, resource optimization, and stakeholder engagement.

Moderator: Jack English, The University of Texas at Austin

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Resilience Effort in Oregon: Making a Difference	Mike Harryman	State Resilience Officer, Oregon Office of Governor Kate Brown
Earthquakes In Texas?! Engaging and Preparing Concerned Community Stakeholders From the Shaking Ground Up	Chris Hillman	City Manager, City of Irving, Texas
Resilience Planning in the Charleston Metro Region	Dan Burger	Charleston Resilience Network
Mitigating at Altitude: Reducing Earthquake Risk in the Rockies	Sean McGowan	FEMA Region VIII

Ridgecrest Earthquake Sequence: Science Findings and Lessons

2:00 – 3:30pm, Concurrent Session 3E

Location: Nautilus 5

This session will summarize science findings and lessons from the 2019 Ridgecrest Earthquake Sequence. This session is supported by the National Science Foundation under award number CCMI-2002617 and by the USGS under cooperative agreement number G20AC00042. Any opinions, findings, and conclusions or recommendations expressed in this session are those of the presenters and do not necessarily reflect the views of the NSF or USGS.

Moderator: Christine Goulet, SCEC

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Geodesy and InSAR	Eric Fielding	NASA
Seismology	Annemarie Baltay	USGS
Fault Rupture	Tim Dawson	CGS
Aftershock Forecasting	Kevin Milner	SCEC
Ground Motions	Silvia Mazzoni	UCLA

Networking Break, 11:00am – 12:00pm, Nautilus Foyer

LATE AFTERNOON CONCURRENT SESSIONS

Development of NIST-FEMA Recommendations for Achieving Functional Recovery

4:00 – 5:30pm, Concurrent Session 4A

Location: Nautilus 2

The late 2018 reauthorization of the National Earthquake Hazards Reduction Program (NEHRP) required two of the NEHRP agencies, NIST and FEMA, to “convene a committee of experts from Federal agencies, nongovernmental organizations, private sector entities, disaster management professional associations, engineering professional associations, and professional construction and homebuilding industry associations, to assess and recommend options for improving the built environment and critical infrastructure to reflect performance goals stated in terms of post-earthquake re-occupancy and functional recovery time.” This session will showcase recent findings from activities conducted by the Applied Technology Council (ATC) and the IDA Science and Technology Policy Institute (STPI), in support of this aim. The discussion will define functional recovery, explain why it is needed, then focus on implementation options including an assessment of each option’s pros and cons developed with input from social scientists as well as architects, engineers, building owners, government officials, and building code officials.

Moderator: Jon Heintz, Applied Technology Council (ATC)

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
NEHRP Reauthorization Charges for Investigation of Functional Recovery	Mike Mahoney	Federal Emergency Management Agency (FEMA)
Functional Recovery Working Group Processes	Steve McCabe	National Institute of Standards and Technology (NIST)
Stakeholder Workshops on Functional Recovery	Leslie Abrahams	IDA Science and Technology Policy Institute (STPI)
Preview of Recommended Options	Lucy Arendt and Ryan Kersting	St. Norbert College & Buehler Engineering

Development and Key Changes of the 2020 NEHRP Recommended Seismic Provisions for Buildings and Other Structures

4:00 – 5:30pm, Concurrent Session 4B

Location: Nautilus 1

The NEHRP Recommended Seismic Provisions for New Buildings and Other Structures (NEHRP Provisions) translates new knowledge and research into standards language and serves as the consensus resource document for US seismic codes and standards. The 2020 NEHRP Provisions are being used in the ongoing development of the seismic provisions for ASCE/SEI Standard 7-22 Minimum Design Loads and Associated Criteria for Buildings and Other Structures. The NEHRP Provisions are developed by the Provisions Update Committee (PUC) of the Building Seismic Safety Council (BSSC) through a five-year project sponsored by the Federal Emergency Management Agency (FEMA). During this cycle, the PUC considered a wide range of critical issues and developed technical proposals related to seismic design ground motion maps, multi-period design spectra, coupled reinforced concrete and steel plate shear walls, rigid wall/flexible diaphragm buildings, and design of nonstructural components. In addition, a framework for future provisions related to functional recovery is being developed. The intent of this group presentation /session is to provide an overview of the development of the NEHRP Provisions and key changes approved by the PUC and BSSC Member Organizations, which are currently being considered by the ASCE/SEI 7-22 seismic subcommittee.

Moderator: Erin Sibley, Mott MacDonald

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Development of the NEHRP Provisions to Support U.S. Codes and Standards	Mai (Mike) Tong	Physical Scientist, Federal Emergency Management Agency
Development of the NEHRP Provisions to Support U.S. Codes and Standards	Jiqiu Yuan	Building Seismic Safety Council
An Overview of the 2020 NEHRP Recommended Seismic Provisions	David R. Bonneville	Chair, 2020 NEHRP Provisions Update Committee, Degenkolb Engineers
Multi-Period Response Spectra and Ground Motion Requirements	Charles A. Kircher	Kircher & Associates
New Nonstructural Design Equations in the 2020 NEHRP Provisions	Bret Lizundia	Rutherford+Chekene

Shut Down Impacts: Can They Be Avoided or Reduced?

4:00 – 5:30pm, Concurrent Session 4C

Location: Nautilus 3

When we talk about earthquake safety, building stability is almost always the emphasis. To achieve true resilience we must also consider the lifelines and services that make everyday life possible. This session will highlight case studies of lifeline networks and critical facilities that demonstrate practical approaches to achieve societal resilience.

Moderator: Jim Wilkinson, Central United States Earthquake Consortium

Presentation Title	Speaker	Affiliation
After the Earthquake, Will the Lights Come Back on in Your Critical Facility?	Phil Caldwell	Schneider Electric
Earthquake Monitoring on the Trans-Alaska Pipeline	Sterling Strait	Alyeska Pipeline Service Company
Oregon Hospitals: Road to Resilience	Yumei Wang	Oregon Department of Geology and Mineral Industries
Emergency Water Supplies for San Diego, California	Jerry Reed	San Diego County Water Authority
Missouri School Seismic Safety Initiative	Philip Gould	Washington University in St. Louis
Performance of Electrical Substations in the 2018 Anchorage, Alaska Earthquake	Riccardo Cappa	Simpson Gumpertz & Heger

Achieving a Seismically Resilient San Diego by 2050: A Collaborative Workshop

4:00 – 5:30pm, Concurrent Session 4D

Location: Nautilus 4

Bring your ideas and passion for seismic resilience policy! This interactive session will discuss how scenarios have resulted in policy or mitigation actions by sharing a few examples of success, followed by interactive table top exercises and discussions to brainstorm policy options and possibilities to achieve a seismically resilient San Diego by 2050.

Moderator: Zahraa Saiyed, Scyma Consulting, University of San Francisco

Speaker	Affiliation
Laurie Johnson	Laurie Johnson Consulting and EERI President
Claudia López	District Director for California Senator Ben Hueso

Ridgecrest Earthquake Sequence: Engineering Findings and Lessons

4:00 – 5:30pm, Concurrent Session 4E

Location: Nautilus 5

This session will summarize engineering findings and lessons from the 2019 Ridgecrest Earthquake Sequence. This session is supported by the National Science Foundation under award number CCMI-2002617 and by the USGS under cooperative agreement number G20AC00042. Any opinions, findings, and conclusions or recommendations expressed in this session are those of the presenters and do not necessarily reflect the views of the NSF or USGS.

Moderator: Janiele Maffei, California Earthquake Authority (CEA)

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
EERI Ridgecrest Response	Maggie Ortiz-Millan	Earthquake Engineering Research Institute
Geotechnical Impacts	Jonathan Stewart	UCLA/GEER
Structural Impacts at the Naval Air Weapons Station China Lake	Dave Swanson	Reid Middleton
Impacts to Manufactured Housing	Kelly Cobeen	Wiss, Janney, Elstner Associates
Structural Impacts to housing and commercial buildings	Wayne Chang	Structural Focus
Lifelines Impacts	Craig Davis	LA Department of Water and Power, <i>retired</i>

Lightning Sessions, 5:30pm – 6:00pm, Nautilus 1, 3, and 5

In these lightning sessions, hear back-to-back one-minute presentations from poster presenters. You'll get a short glimpse into their work and an opportunity to note posters you'd like to visit later in the poster reception and reception.

Poster Session & Reception, 6:00pm – 7:30pm, Grande Ballroom A and Grande Foyer

FRIDAY MARCH 6

MORNING CONCURRENT SESSIONS

Assessing and Communicating Hazards: From Early Warning to Aftershocks

9:00 – 10:30am, Concurrent Session 5A

Location: Nautilus 1

From National Seismic Hazard Model to ShakeAlert and Operational Aftershock Forecasting, there are new hazards assessment approaches. This session will include discussion of these hazards assessments, and how they are best communicated.

Moderator: Cynthia Pridmore, California Geological Survey, and Keith Knudsen, USGS

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Failure to alert? Exploring Perceptions of ShakeAlert During the 2019 Ridgecrest Earthquake Sequence	Sara McBride	USGS
New National Aftershock Forecast Capabilities and Application to the Anchorage And Ridgecrest Earthquakes	Jeanne Hardebeck	USGS
Global Rapid Damage Mapping System with Spaceborne SAR Data	Sang-Ho Yun	NASA JPL
Developing Methodologies for Rapidly Updating PAGER Loss Estimates	Kishor Jaiswal	USGS

Progress and Challenges in Utilizing Simulated Ground Motions for Engineering Practice

9:00 – 10:30am, Concurrent Session 5B

Location: Nautilus 2

Although recorded ground motion datasets get better populated over time, the use of simulated earthquake ground motions to supplement those datasets for the design of engineered structures is highly desirable. Ground motions simulated by various methods can be used to enhance dynamic analysis of buildings and bridges or to perform probabilistic seismic hazard analysis when recorded ground motions are sparse or for specific local source-site combinations. However, for the engineering community to gain confidence in these simulations, they must first be validated against available recorded data or empirical models. As a result, validation of ground motion simulations is also gaining special attention. In recent years, ground motion simulation models have improved significantly through better science implementations and validation-modification cycles. This oral session offers an opportunity to discuss a wide range of simulation methods and their current strengths and shortcomings through available validation methodologies in addition to the progress and challenges in utilizing simulated ground motions in the engineering practice.

Moderator: Christine Goulet, SCEC

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Progress and Challenges in Ground Motion Simulation Validation (GMSV)	Nico Luco	USGS
Basin effects in simulated and observed ground motions for Southern California	Jonathan Stewart & Buka Nweke	UCLA
Guidelines on Utilization of Simulations for Engineering Building Response Applications	Ting Lin	Texas Tech University
Selection of Simulated Cybershake Time Series for Engineering Building Code Analyses	Jack Baker	Stanford University
Utilization of Simulated Ground Motions for Bridge Engineering Applications	Farzin Zareian	UCI
Tall Building Ground Motions in Southern California: Comparison of Recent Design Ground Motions with Cybershake Simulated Ground Motions	Marty Hudson	Turner Construction Company

Developing Effective Outreach Tools and Strategies

9:00 – 10:30am, Concurrent Session 5C

Location: Nautilus 3

This session will provide proven practical ways to bring your message to your communities. Session will discuss outreach through the Great ShakeOut Campaign, neighborhood events, social media, and more.

Moderator: Althea Rizzo, Oregon Office of Emergency Management

Presentation Title	Speaker	Affiliation
Tips for Conducting Earthquake Risk Reduction Outreach through the Great ShakeOut Campaign and Media/Social Media	Maximilian Dixon	Washington State Emergency Management Division
Yes, You Can Talk Seismic Safety in Schools to Non-Engineers!	Lucy Arendt	St. Norbert College
Social Media Strategies for the 'Elder Millennial' Working in Non-Profit, Government, and Beyond: Case Studies, Big Data, and Subsequent Expectations	Jason Ballman	Southern California Earthquake Center
Neighborfest: Social Cohesion as a Cornerstone for Earthquake and Tsunami Preparedness	Daniel Homsey and Mark Benthien	City of San Francisco Neighborhood Empowerment Network and Southern California Earthquake Center

From Expectation to Reality: Understanding and Leveraging Public Perceptions to Improve Earthquake Resilience

9:00 – 10:30am, Concurrent Session 5D

Location: Nautilus 4

This session explores various ways the public is engaged, incentivized, and ultimately motivated to adopt seismic safety measures. Topics include the new research-informed 'No Code. No Confidence.' campaign to bring transparency to building codes; lessons learned from business and public demand for resilient buildings; the QuakeSmart program for community seismic resilience; and insights from the residential earthquake mitigation Earthquake Brace + Bolt Program.

Moderator: Leslie Chapman-Henderson, Federal Alliance for Safe Homes, Inc. (FLASH)

Presentation Title	Speaker	Affiliation
ReadyBusiness QuakeSmart: How Community Stakeholders are Leveraging the Program to Advance Seismic Safety	Daryl L. Osby	Fire Chief County of Los Angeles
Resilient Design for Functional Recovery – Motivations and Drivers	Curt B. Haselton	CSU Chico and HB-Risk
Earthquake Brace + Bolt Program: Insights from Improving Homeowners' Seismic Resilience	Janiele Maffei	California Earthquake Authority
No Code No Confidence Campaign - Inspect2Protect.org: Researching Homeowner Perceptions of Building Code Performance, Adoption, and Enforcement And FLASH Effort to Increase Transparency on Current Adopted Codes in Communities Across the U.S. as the Foundation for Resilience	Leslie Chapman-Henderson	Federal Alliance for Safe Homes, Inc. (FLASH)

EERI Learning from Earthquakes: Resilience Lessons from Reconnaissance Over Time

9:00 – 10:30am, Concurrent Session 5E

Location: Nautilus 5

The session will present resilience findings and observations from earthquakes that have occurred in the last 10 years. Presentations draw on resilience reconnaissance studies that are part of several new EERI initiatives to more carefully document and measure resilience through reconnaissance.

Moderator: Erica Fischer, Oregon State University

<i>Presentation Title</i>	<i>Speaker</i>	<i>Affiliation</i>
Palu Indonesia Earthquake and Tsunami Reconnaissance Findings on Population Displacement and Recovery	Robert Olshansky and Ghazala Naeem	University of Illinois - Urbana Champaign, retired, and Resilience Group
Initial Survey of Businesses Following the November 30, 2018 Anchorage Earthquake	Mike Mieler	ARUP
Tools for Advancing Understanding of Community Resilience through Post-Earthquake Reconnaissance	Debra Murphy	Slate Geotechnical Consultants
Learning From Earthquakes New Zealand Travel Study Program: Challenges in Rebuilding the Built Environment	Ezra Jampole	Exponent
Learning From Earthquakes New Zealand Travel Study Program: Opportunities in Rebuilding the Built Environment	Anne Husley	Stanford
Environmental Impacts of 2010-2011 Canterbury Sequence and 2016 Kaikoura Earthquake: Lessons Learned to Inform Resilient Strategies	Andrew Makdisi	University of Washington

Networking Break, 10:30am – 10:45am, Nautilus Foyer

CONCLUDING PLENARY SESSION

Local Perspectives from the Ridgecrest Earthquake Sequence

11:00am – 12:15pm, Plenary Session P7

Location: Grande Ballroom B&C

This session will provide an opportunity to hear from local officials about the response and recovery from the Ridgecrest Earthquake Sequence. This session is supported by the National Science Foundation under award number CCMI-2002617 and by the USGS under cooperative agreement number G20AC00042. Any opinions, findings, and conclusions or recommendations expressed in this session are those of the presenters and do not necessarily reflect the views of the NSF or USGS.

Moderator: Kate Scharer, USGS

<i>Speaker</i>	<i>Affiliation</i>
Jed McLaughlin	Ridgecrest Chief of Police
Sean Frieberg	US Navy
Jonathan Schmidt	Trona
Robyn Moses	Red Cross

Closing Thoughts and Call to Action

12:15pm – 12:30pm, Plenary Session P7

Location: Grande Ballroom B&C

<i>Speaker</i>	<i>Affiliation</i>
David Maurstad	FEMA Deputy Associate Administrator for Insurance and Mitigation and chief executive of the National Flood Insurance Program
Leslie Chapman-Henderson	President and CEO, Federal Alliance for Safe Homes, Inc. (FLASH)
Laurie Johnson	Laurie Johnson Consulting and EERI President

LUNCH (TICKETS REQUIRED)

1:00 – 2:30pm

Location: Grande Ballroom B&C

SDC Award Ceremony with presentations by EERI-FEMA NEHRP Graduate Fellows

1:30 – 2:30pm, Plenary Session P8

This session will unveil the winners of the 2020 EERI Seismic Design Competition and include presentations by EERI-FEMA NEHRP Graduate Fellows.

<i>Speaker</i>	<i>Affiliation</i>
Sarah Wichman	University of Washington, EERI-FEMA NEHRP Graduate Fellow
Andrew Makdisi	University of Washington, EERI-FEMA NEHRP Graduate Fellow
Polly Murray	University of Colorado Boulder, EERI Student Leadership Council Co-President
Tyler Oathes	University of California, Davis, EERI Student Leadership Council Co-President

POSTER SESSION

2020 National Earthquake Conference

March 4-6, 2020, San Diego

POSTER RECEPTION & VIEWING

Thursday March 5, 6:00 – 7:30pm, Grande Ballroom A

Poster presenters will be present at their posters to answer questions and discuss their poster content during the poster reception on Thursday evening.

Posters will also be available for independent viewing by conference attendees from 10:00am on Thursday, March 5 to 2:00pm on Friday, March 6.

POSTER PRESENTERS

General Conference Session

Poster ID #	Presenter	Presenter Affiliation	Poster Title
1	Tal Feinstein and Eddie Vega	UC Berkeley / Holmes Structures	Lessons from the 2019 LFE Program Focused on Socioeconomic Aspects Of Community Engagement
2	Yumei Wang	Oregon Department of Geology and Mineral Industries	Disasters, Resilience and the Next Generation: Leaping through the Dragons Gate
3	Katherine Johnson	National Institute of Standards and Technology	Functional Recovery Lessons from the Cook Inlet Earthquake
4	Kevin Miller	California Governor's Office of Emergency Services	California Earthquake, Tsunami, and Volcano Program
5	Noha Farghal	US Geological Survey	Strain-Estimated Ground Motions and Magnitudes of Recent Earthquakes In California
6	Doug Bausch	Niyam IT (FEMA Consultant)	Establishing Dynamic Infrastructure Updates for use in Hazus Earthquake Risk Assessments
7	Steven Storbakken	Pomona Valley Hospital Medical Center	Hospital Disaster Risk Assessment for Individuals with Access and Functional Needs
9	Patrick C. Bassal	UC Davis	Dynamic Analyses of Liquefaction at Palinurus Road During the Canterbury Earthquake Sequence
10	Karl Eid	PhD Student at the University of Illinois at Urbana-Champaign	Modeling Casualty Arrivals at Hospitals after Earthquakes
11	Jeena Jayamon	Structural Engineer, John A. Martin & Associates	Object Oriented Programming in Structural Dynamics Course Curriculum

12	Polly Murray	University of Colorado Boulder	Framework for Performance Assessment of Earthquake-Damaged Buildings Using Computationally-Efficient 3D Simulation and Machine Learning Methods
13	Preetish Kakoty	University of British Columbia, Vancouver	Performance of Pre-1980 Reinforced Concrete Shear Wall Buildings in Large Magnitude Cascadia Subduction Zone Earthquakes
14	David Rivera	Oregon State University	Experimental and Numerical Analysis of a Strongback Frame as a Retrofit of a Moment-Resisting Frame
15	Tonatiuh Rodriguez-Niki	Cal State LA	Interpretation of Earthquake Damage and Experimental Verification of Damage Index for RC Buildings
16	Barbara Simpson	Oregon State University	Hydrodynamic Real-Time Hybrid Simulation to Advance Experimental Testing of Coastal Structures
17	David McDermott	Architect	The CASL System
18	Walker Maddalozzo	Oregon State University	Post Earthquake Fire Performance of Transportation Structures
19	Christos Zoupantis	Mueser Rutledge Consulting Engineers	Accounting for Subsurface Variability in Site Response
20	Mario Gonzalez-Duran	Universidad Autonoma de Baja California	Analysis of Earthquake Risk in the City of Tijuana, Mexico
21	Manuel Vega	UC San Diego	Real-Time Hybrid Simulation Using LHPOST
22	Eric Johnson	University of Colorado, Boulder	Influence of Mitigation Strategies for Induced Earthquakes on Risk to Buildings
23	Maha Kenawy	University of Nevada, Reno	Near-Fault Earthquake Risk to Reinforced Concrete Buildings Based on High-Resolution Physics-Based Ground Motion Simulations
24	Christianos Burlotos	University of Notre Dame	Defining (and Lowering) the Cost of Safety: A Technical and Economic Comparison of Seismic Design Solutions in Haiti
25	Christianos Burlotos	University of Notre Dame	A Framework for the Selection of Default Suites of Ground-Motion Records: A Case Study of New Zealand's South Island
26	M. Khalid Saifullah, Christine E. Wittich	University of Nebraska-Lincoln	System Identification and Performance of Manufactured Housing in the US
27	Sarah Wichman	University of Washington	3D Dynamic Analysis of Multi-Story Rocking Cross Laminated Timber Walls
28	Sarah Wichman	University of Washington	Investigation of the Short-Period Paradox for Steel Special Concentrically Braced Frame Buildings
29	Chanseok Jeong	Department of Civil and Environmental Engineering, The Catholic University of America, Washington, DC	Full-Waveform Inversion of Seismic Input Motions in a Truncated Domain
30	Jenna Wong	San Francisco State University/LBL	Design of a Large-Scale, Biaxial Soil-Box Experimental System for Seismic Soil-Structure-Interaction Studies

31	Mamun Miah	Lawrence Berkeley National Lab	Near-Fault Building Response Correlation with Ground Motion Parameters
32	Mehrdad Aghagholizadeh	Southern Methodist University	Seismic Response of Tall Buildings Coupled with Rocking Walls
34	Emrah Yenier	Nanometrics Inc.	Site-Specific Characterization of Earthquake Ground Motions: Papua New Guinea Case Study
35	Gloria Faraone	University of California, San Diego	Resiliency of Post-Installed Anchorage In Reinforced Concrete Shear Walls Subjected to Simulated Earthquake Loads
36	Arjun Jayaprakash	North Carolina State University	Performance Limit States of Steel Substructures with Socket-type Connections
37	Bahareh Heidarzadeh/David Teague	Senior Engineer at ENGEO	Case Histories of Non-Ergodic Seismic Hazard Analysis
38	David Pirchio	University of Notre Dame	Medieval Italian Churches: Seismic Risk Assessment and Intervention Prioritization
39	Amanpreet Singh	University of California, San Diego	Material, Component, and System-Level Experimental Efforts within the CFS-NHERI Project
40	Zhidong Zhang	Johns Hopkins University	Simulation of Cold-formed Steel Framed Shear Walls for Buildings: Efforts within CFS-NHERI
41	Maria Camila Lopez Ruiz	University of California, Berkeley	San Diego-Coronado Bridge Behavior Considering Flexible Elements on Isolation Bearings
42	Juan Manuel Mayoral	IIUNAM	Basin-Edge Effects in Very Compressible Soft Clays Site Response
43	Azucena Roman de la Sancha	IIUNAM	Seismic Vulnerability and Resilience of Transportation Networks in Urban Areas
44	Wilfrid Djima	Gebze Technical University	Performance Based Design for Healthcare Facilities
45	Jianyu Cheng	University of California, San Diego	Seismic Performance of Short-Period Reinforced Masonry Buildings
46	Jianyu Cheng	University of California, San Diego	Shake-table Tests Investigating the Drift Capacity of Shear-dominated Reinforced Masonry Wall Systems
47	Tadesse Meskele	GRI	Comparisons of Subduction Zone Directivity Factors with Current Generation Crustal Factors
77	Anne Hulsey	Stanford	Assessing the Safety of Tall Pre-Northridge Steel Frame Buildings and Implications on Post-Earthquake Cordoning and Recovery

Ridgecrest Earthquake Sequence

Poster ID #	Presenter	Presenter Affiliation	Poster Title
48	Cynthia L. Pridmore	California Geological Survey	California Earthquake Clearinghouse, July 4th and 5th 2019 Ridgecrest Earthquake Sequence
49	Michael DeFrisco	California Geological Survey	Triggered Slip on the Little Lake Fault Zone Resulting from the 2019 Ridgecrest Earthquake Sequence, California
50	Fred Turner	Consulting Structural Engineer	Safety Assessment Program Observations from the Ridgecrest Sequence and the South Napa Earthquake
51	Oliver Stephenson	Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena, California	Deep Learning-based Earthquake Damage Mapping with InSAR Coherence Time Series
52	Sean Ahdi	Exponent/University of California, Los Angeles	Engineering and Geological Effects of the July 2019 Ridgecrest Earthquake Sequence
53	Rachel Adams	Natural Hazards Center	Schools, Earthquake Experience, and Earthquake Early Warning: A Study of Ridgecrest, California and Anchorage, Alaska
54	Jenn Ciofolo	Reid Middleton	Earthquake Reconnaissance Management Challenges at Naval Air Weapons Station China Lake
55	Frank Jordan	San Bernardino County, Land Use Services	Ridgecrest-Trona Earthquake and Fault Complex, San Bernardino County
56	Miles Wagner	San Bernardino County, Office of Emergency Services	San Bernardino County Emergency Response to July 4th-5th Ridgecrest-Trona Earthquake Complex
57	Miles Wagner	San Bernardino County, Office of Emergency Services	Ridgecrest-Trona Earthquake Complex, Liquefaction and Lateral Spreading, San Bernardino County
58	Christine Goulet	Southern California Earthquake Center, University of Southern California	Survey of Damaged Tufa Pinnacles in Trona Following the 2019 M7.1 Ridgecrest Earthquake
59	John Dai	Southern California Edison	Seismic Shock to the Electric System
60	Kenneth Hudnut	U.S. Geological Survey	Cross-Fault Interaction in the July 2019 Ridgecrest Earthquake Sequence
61	Grace Parker	U.S. Geological Survey	Repeatable Source-, Path-, and Site-effects of the July 2019 M7.1 Ridgecrest Earthquake Sequence
62	Wael Hassan	University of Alaska	Comparing Masonry Buildings Response to Ridgecrest Earthquake Sequence and M7.1 2018 Anchorage Earthquake

63	Rich Koehler	University of Nevada, Reno, Nevada Bureau of Mines and Geology	The Surface Rupture Pattern Associated with the 2019 Mw6.4 and Mw7.1 Ridgecrest California Earthquakes: Implications for Seismic Hazards in the Walker Lane
64	Kevin R. Milner	University of Southern California	Operational Earthquake Forecasting During the 2019 Ridgecrest, California, Earthquake Sequence with the UCERF3- ETAS Model—Evaluation and Lessons Learned
65	Joseph Wartman	University of Washington	Rapid UAV Imaging of Ground Deformation Following the M6.4 Earthquake of the Ridgecrest Sequence
66	Susan Hough	US Geological Survey	Near-Field Ground Motions from the M7.1 Ridgecrest, California, Earthquake: Subdued Shaking Due to Non-linear Site Response
67	Katherine Kendrick	US Geological Survey	Summary of Surface Displacements from the 2019 Ridgecrest, California Earthquake Sequence
68	Nathan Lemme	US Navy	Seismic Performance of Explosives Magazines in Recent Ridgecrest Earthquakes
69	Alexandra Pickering	U.S. Geological Survey	Rapid Synthesis of Surface Rupture Mapping and Observation Data During Response to the 2019 Ridgecrest Earthquake Sequence, CA
70	Annemarie Baltay	USGS Earthquake Science Center, Moffett Field	Stress Drop and Ground-Motion Source Characterization of the July 2019 M7.1 and M6.4 Ridgecrest Earthquake Sequence
71	Alan Yong	USGS-Pasadena	Site Response Analyses of U.S. Geological Survey Rapid Aftershock Pasadena (RAP) Stations Deployed after the M6.4 and M7.1 Ridgecrest Earthquakes
72	Fred Turner	Consulting Structural Engineer	Benefits and (Lesser So) Risks of Sharing Intelligence After Earthquakes Through Clearinghouses: Ridgecrest Earthquake Sequence
73	Kenneth S. Hudson	University of California, Los Angeles	Building Damage Due to Liquefaction in the Ridgecrest Earthquake Sequence
74	Andrew Barbour	U.S. Geological Survey	Earthquake Magnitudes from Dynamic Strain: Application to the 2019 Ridgecrest Earthquakes
76	Mehmet Celebi	U.S. Geological Survey	Highlights of the tallest building in Los Angeles shaken by the Mw7.1 Ridgecrest, California earthquake of July 5, 2019

Puerto Rico Earthquake Sequence

ID #	Presenter	Presenter Affiliation	Poster Title
75	Eric Fielding	Jet Propulsion Laboratory, California Institute of Technology	SAR Imaging of the Coseismic Deformation from the 2020 Southwest Puerto Rico Seismic Sequence



EERI COMMITTEE MEETINGS

2020 National Earthquake Conference

March 4-6, 2020, San Diego

EERI EARTHQUAKE SPECTRA EDITORIAL BOARD

Thursday, March 5, 7:30 – 8:45am, Nautilus 1

Closed - committee members only

EERI SCHOOL EARTHQUAKE SAFETY INITIATIVE (SESI)

Thursday, March 5, 7:30 – 8:45am, Nautilus 2

Closed - committee members only

EERI LEARNING FROM EARTHQUAKES (LFE)

Thursday, March 5, 7:30 – 8:45am, Nautilus 3

Open to All EERI Members

EERI PUBLIC POLICY & ADVOCACY COMMITTEE (PPA)

Thursday, March 5, 6:00 – 7:00pm, Nautilus 4 -- *updated 3/2/2020*

Open to All EERI Members

EERI ORAL HISTORY COMMITTEE

Thursday, March 5, 6:00 – 7:00pm, Nautilus 2

Closed - committee members only

EERI YOUNGER MEMBERS COMMITTEE (YMC)

Friday, March 6, 7:30 – 8:45am, Marina 6

Open to All EERI Members

EERI PROFESSIONAL DEVELOPMENT COMMITTEE (PDC)

Friday, March 6, 7:30 – 8:45am, Marina 5

Open to All EERI Members

SPECIAL EVENTS & MEETINGS

2020 National Earthquake Conference

March 4-6, 2020, San Diego

EERI SEISMIC DESIGN COMPETITION RECEPTION AND AUCTION

Tuesday, March 3, 6:00 – 8:00pm, Grande Ballroom A

Open to All Conference Attendees

Meet the next generation of earthquake engineers and support the students competing in the 17th Annual Undergraduate Seismic Design Competition (SDC) by attending the SDC Welcome Reception and Calcutta Auction. Enjoy snacks and drinks while students 'sell' their competition models to the highest bidder!

Organizers: Tyler Oathes and Polly Murray

PRACTICE SESSION FOR YOUR LIGHTNING TALK

Tuesday, March 3, 5:30 – 7:00pm, Nautilus 3

Open to All Lightning Presenters

Come and practice in advance of your lightning presentation. Learn tips and prepare in a casual friendly environment with communication experts.

Organizers: Jason Ballman, SCEC

EERI MEET THE LEADERS BREAKFAST FOR YOUNGER MEMBERS

Wednesday, March 4, 7:00 – 8:30am, Nautilus 5

Closed – by invitation only

The EERI Younger Members Committee is hosting a breakfast event for Young Professionals and Academics. During this session, younger members will identify a leader they wish to meet and join the leader at their numbered table for a 30-minute discussion about their experiences within the earthquake engineering industry and EERI community.

Organizers: Ezra Jampole, Maha Kenawy, and Ashley Morales-Cartagena

WELCOME AND NETWORKING RECEPTION

Wednesday, March 4, 5:30 – 7:00pm, Nautilus Foyer and Grande Foyer

Open to All Conference Attendees

Join us for a welcome reception to network and connect with other conference attendees. Don't forget to bring your drink ticket from registration! Small bites provided.

LISTENING SESSION: UPDATING THE U.S. POST-EARTHQUAKE INVESTIGATIONS PLAN

Wednesday, March 4, 6:00 – 7:00pm, Marina 6

Open to All Conference Attendees

This listening session will provide an opportunity for attendees to offer input on a potential update of USGS Circular 1242, "The Plan to Coordinate NEHRP Post-earthquake Investigations." Discussion during the session will help inform NEHRP agencies about community views on necessary updates to the plan.

DIVERSITY IN EERI NETWORKING EVENT

Wednesday, March 4, 7:00 – 8:00pm, Nautilus 5

Open to All Conference Attendees

As a leader in connecting professionals from the diverse array of disciplines associated with seismic risk reduction, EERI aims to build a community among its members, including underrepresented groups, people of color, people of the LGBTQIA+ community, and women. Enjoy appetizers and drinks while you expand your network and learn more about organizations promoting diversity and inclusion. All conference attendees are welcome to join.

Organizers: Erica Fischer, Ayse Hortacsu, Zahraa Saiyed, Terri Norton, and Guillermo Diaz-Fanas

CLASSROOM OUTREACH TRAINING WORKSHOP - K'NEX WITH YOUR COMMUNITY

Thursday, March 5, 2:00 - 3:30pm, Marina 6

Open to All Conference Attendees

Presented by EERI's School Earthquake Safety Initiative (SESI), the goal of this hands-on, interactive workshop is to introduce student chapters and professionals to SESI's classroom outreach curriculum and to provide them with the tools to complete this outreach at their local elementary and high schools. Younger members, EERI chapter members, and student chapter members are encouraged to attend this workshop, giving you the opportunity to connect and network with the EERI community.

Organizers: Christine Beyzaei, Silvana Cobos, Jessi Thangjitham, Lelli Van Den Einde, Eddie Vega, Sarah Wichman, and Charlie Zhang

CUSEC MEETING – CANCELED AS OF 3/2/2020

Thursday, March 5, 6:00 – 7:30pm, Nautilus 4

Closed – by invitation only

Organizers: Jim Wilkinson

WSSPC BOARD AND ANNUAL BUSINESS MEETING

Friday, March 6, 2:00 – 3:00pm, Nautilus 3

Closed – by invitation only

Organizers: Matthew Wall

SAN DIEGO CENTRAL LIBRARY WALKING TOUR

Friday, March 6, 2:30 – 4:30 pm, departing from Sheraton Hotel lobby

Registration required, inquire at registration desk - Cost \$25

Join award-winning and internationally renowned architect, Rob Quigley, on a tour of the recently completed San Diego Central Library. San Diego's new Central Library replaces a deteriorating and overcrowded downtown facility built in 1954. The architectural design was conceived by Rob Quigley in a series of interactive workshops attended by hundreds of San Diegans. The new library has two civic objectives: first and foremost, to serve the community's needs for information, literacy, and knowledge in the 21st century; and second, to be a new community landmark—a civic icon that embodies San Diego's commitment to the future.

JOINT CONSORTIA MEETING – CANCELED AS OF 3/2/2020

Friday, March 6, 3:00 – 5:30pm, Nautilus 3

Closed – by invitation only

Organizers: Matthew Wall, Jim Wilkinson

