

2020 ANNUAL REPORT

Utah Chapter

of the Earthquake Engineering Research Institute



Report Date: February 15, 2021

This report summarizes the membership and activities conducted by the Utah Regional Chapter of the Earthquake Engineering Research Institute during 2020.

MISSION & GOALS

The Utah Chapter mission is to advance EERI's goals of promoting the advancement of the science and practice of earthquake engineering, improving understanding of the impact of earthquakes, and advocating comprehensive and realistic measures for reducing the harmful effects of earthquakes by:

- Being a source of collective expertise on seismic hazards and risk reduction
- Partnering with other organizations and agencies involved with seismic-risk issues
- Being an advocate for seismic safety at the State and local government levels
- Increasing awareness through education and lecture opportunities
- Promoting student chapters and activities
- Involving members through participation in committee work

MEMBERSHIP SUMMARY

The Utah Regional Chapter had a total of 29 members in 2020.

OFFICERS

The Board consisted of the following members:

Role	Name	Affiliation	Email
President	Craig Wilkinson	Reaveley Engineers	cwilkinson@reaveley.com
Secretary-Treasurer			
Past President	Chris Garris	Consolidated Engineering Laboratories	cgarris@ce-labs.com
President Elect	Jordan Terry	kpff Consulting Engineers	Jordan.Terry@kpff.com
Director	Divya Chandrasekhar	Dept. of City & Metropolitan Planning, University of Utah	CHANDRASEKHAR@arch.utah.edu
Director	Travis Gerber	Gerhart Cole Inc	travis@gerhartcole.com
Director	Emily Kleber	Utah Geological Survey	ekleber@utah.gov

Board meetings were held monthly beginning in March, except for July, when no meeting was held. All meetings were virtual, as the Utah Chapter did not hold any in-person events due to the COVID-19 pandemic.

BUDGET & FINANCIALS

The Utah Chapter did not have any sources of income—other than dues collected by EERI—nor did we have any expenses in 2020. Our sponsorship of events and activities was done by providing our time in organizing and advertising/publicizing the events.

CHAPTER ACTIVITIES

The Utah Chapter does not have regularly scheduled meetings. The meetings are scheduled as needed and tend to reach out to the community beyond the EERI membership.

EERI Webinar – Magna, Utah Earthquake Reconnaissance Briefing – July 23, 2020

We worked with EERI national and LFE to organize this webinar to provide an overview of the impacts from the M5.7 March 18, 2020 Magna, Utah earthquake. The webinar shared insights covering science, engineering, and response aspects of the earthquake. Attendees learned how the earthquake affected the natural and built environment, as well as about current mitigation efforts in Utah.

Utah Resilience Symposium – 2020 Distinguished Lecture with David Bonowitz – Nov 12, 2020

David Bonowitz presented his lecture about the need to consider functional recovery while designing our buildings and cities. A virtual meeting was also held with Mr. Bonowitz and various stakeholders here in Utah to discuss applications of functional recovery in the state. The flyer for the webinar is attached.

COMMUNICATIONS

The Utah Chapter does not have a set Newsletter publication schedule. During 2020, a Fall issue of the newsletter was published. The newsletter is sent to multiple organizations for distribution to their membership. Issued newsletters are attached.

STUDENT CHAPTER COORDINATION

Brigham Young University has an active student chapter. The Utah Chapter tries to be an active supporter of the BYU participation in the Student Design Competition.

During 2019 the Utah Chapter has actively pursued creating a student chapter at the University of Utah. We made some progress in this effort, including recruiting a faculty member to serve as a sponsor/advisor for the chapter. Unfortunately, when the University was forced to go to virtual learning due to the COVID pandemic, the efforts were put on hold.

CHAPTER NEEDS AND REQUESTS FOR THE BOARD OR EERI STAFF

The Utah Chapter would benefit greatly from increased communication with the EERI Board and staff. Items that we could use assistance on, include:

- Communication tools, including sending email to our membership
- Chapter budgeting and financials
- Web content updating

Within the Utah Chapter we have had turnover, including losing the secretary/treasurer from our chapter Board, that has resulted in a loss of institutional knowledge within our Board. We would like the EERI staff to educate us on the tools available to us.

LIST OF ATTACHMENTS

Included at the end of this report are various attachments to supplement the information included above. A list of the attachments is included below:

- EERI Utah Chapter Fall 2020 Newsletter
- Flyer for David Bonowitz Distinguished Lecture



Presidents Message

By Craig Wilkinson
EERI Utah Chapter President

This year has been quite an adventure, ordeal, and challenge—it’s certainly one that we will not forget. When I started as chapter president in January, I never could have imagined in my wildest dreams what 2020 had in store. With the global pandemic, a Utah earthquake, and record windstorms, our thoughts go out to all those in our communities who have endured suffering and devastation. Our work, research, and lobbying are important; however, for much of this year these professional endeavors have taken a backseat to concerns for our health and lives. I am truly grateful to the many first responders and professionals who have done so much to help keep us safe in these turbulent times, and I sincerely hope that you and your families have been safe and healthy this year.

As a community of earthquake professionals (some would even say geeks), the Magna Earthquake on March 18th brought some exciting opportunities to study a homegrown seismic event. We were able to see firsthand how well (or not so well) prepared our community is for a Utah earthquake. Although this wasn’t the “Big One” that we know the Wasatch Fault can deliver, it was large enough to impact lives and livelihoods. By causing significant damage, the event triggered our state’s emergency response efforts. There are many chapter members who personally evaluated buildings and key components of Utah infrastructure to assess post-earthquake damage. Additionally, the [online clearinghouse established by](#)

[the Utah Geological Survey](#) added plenty of data to our shared pool of earthquake knowledge.

While we have known that our earthquake risk is high, most of us living in the area had no firsthand experience with a significant seismic event. Having felt the shaking of the Magna Earthquake and seeing the real damage, I think we can appreciate the need to put more work and effort into our preparations for bigger quakes that will inevitably shake our communities. I’m sure most of us also learned what we will personally change as we get ready for the next time. Thank you to the many EERI members that responded to the needs of our communities and have helped to educate others by sharing what they learned and observed.

The global COVID-19 pandemic has prevented us from holding our regular in-person meetings and events in 2020. I’m sure we’ve all missed the conviviality of getting together with each other. Our organization has quickly adapted by shifting to virtual board meetings since March, by hosting [a webinar about the Magna Earthquake in July](#), and by arranging the online screening of the EERI Distinguished Lecture by David Bonowitz. You all deserve a big round of applause for your own adaptations and resilience in staying strong during difficult times.

I’m hopeful that next year will bring happier times, and I look forward to our continued organizational progress. Jordan Terry will take over as the Utah Chapter President in 2021, and I’m confident his kindness and enthusiasm will lead us to new and great places.

Stay safe and healthy, and best wishes for a peaceful holiday season!



Wasatch Front Unreinforced Masonry Risk Reduction Strategy

By Barry Welliver
EERI Board of Directors –
Vice President, EERI Utah
Chapter Member

In 2019 the Federal Emergency Management Agency (FEMA) Region VIII partnered with the Utah Division of Emergency Management (DEM) to co-convene a summit on unreinforced masonry (URM) buildings in Utah. The summit occurred over two days and was attended by more than 100 participants from diverse professional backgrounds. A summary report titled Proceedings: [*FEMA-Sponsored Summit on Unreinforced Masonry Building in Utah*](#)¹ identified the major barriers and challenges and made a series of recommendations for reducing the risks associated with URM's.

That event together with FEMA's support for the Salt Lake City [*Fix the Bricks*](#)² program resulted in Utah being considered for a pilot study to create a URM Risk Reduction Strategy.

The *National Mitigation Investment Strategy (Investment Strategy)* – an inter-agency strategy published in 2019 – was developed to consider a whole community approach for being more intentional in setting resilience and mitigation investment priorities. Utah's long dedication to creating a solution and its obvious need was key to being selected for the pilot under the *Investment Strategy*.

¹ Applied Technology Council – ATC-137-2
<https://www.atcouncil.org/atc-137-2-urm>

² Salt Lake City Government, Fix the Bricks
<https://www.slc.gov/em/fix-the-bricks/>

³ FEMA P-774, Unreinforced Masonry Buildings and Earthquakes, Developing Successful Risk Reduction Programs
[*FEMA P-774: Unreinforced Masonry Buildings and Earthquakes, Developing Successful Risk Reduction Programs*](#)

The *Wasatch Front Unreinforced Masonry Risk Reduction Strategy* was developed and reviewed under the guidance of a team of diverse professionals. The purpose was to provide the State of Utah with a risk reduction strategy that will significantly reduce the risks across the Wasatch Front posed by URM buildings.

There were several guiding documents that foundational to the work. These included:

1. [*FEMA P-774: Unreinforced Masonry Buildings and Earthquakes, Developing Successful Risk Reduction Programs*](#)³
2. [*Mitigation Framework Leadership Group \(MitFLG\) National Mitigation Investment Strategy*](#)⁴
3. [*FEMA 275: Planning for Seismic Rehabilitation: Societal Issues*](#)⁵
4. [*Utah Guide for the Seismic Improvement of Unreinforced Masonry Dwellings*](#)⁶
5. [*Utah Students at Risk: The Earthquake Hazards of School Buildings*](#)⁷

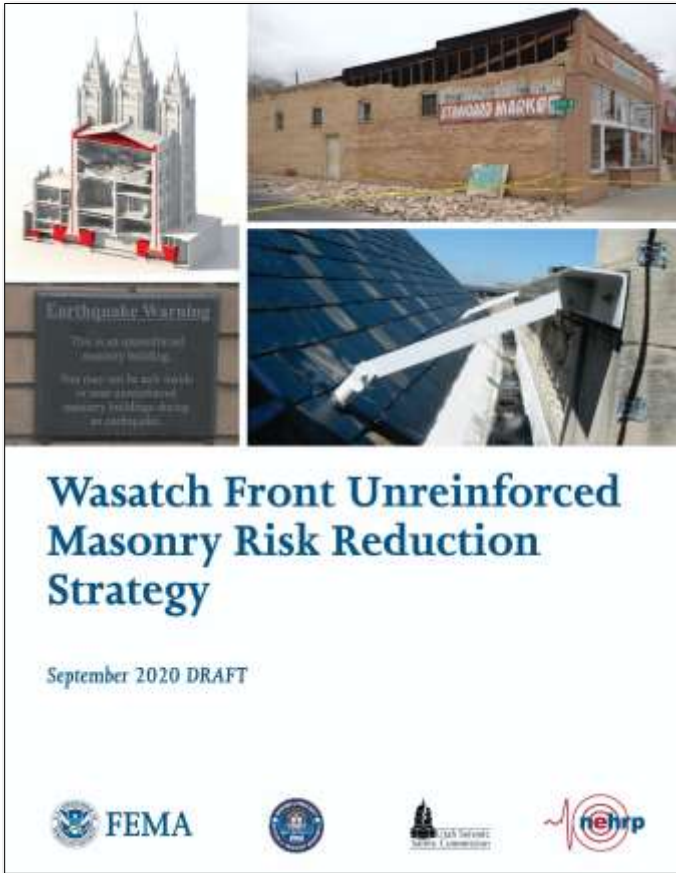
The Project Kick-Off meetings began in January 2020 and was followed by a Strategy Development meeting in mid-February. With the beginning of the coronavirus epidemic in March, the remainder of the work was conducted by virtual team meetings. The first 50% Draft was completed in early June 2020 and reviewed by the Project Review Team. Feedback received from that review was integrated into the document and a 90% draft was produced in July and finalized during August. The final draft was prepared for review by FEMA and the Utah Division of Emergency Management in early September. That final draft was updated and presented for final action

⁴ FEMA, National Mitigation Investment Strategy
<https://www.fema.gov/media-library-data/20130726-1728-25045-2959/femap774.pdf>

⁵ FEMA 275, Planning for Seismic Rehabilitation: Societal Issues
https://www.fema.gov/media-library-data/20130726-1453-20490-9286/fema_275.pdf

⁶ USSC, 2016 <https://ussc.utah.gov/pages/view.php?ref=1281>

⁷ USSC/SEAU, 2011
<https://ussc.utah.gov/pages/view.php?ref=147>



in late September 2020. The release is expected to be by the end of this year.

The document's intended primary audience is state and local policy makers; however, it strives to equip a much larger community including building officials, engineers, planners, contractors, and architects who will ultimately need to be prepared to help inform any public policies and to develop community engagement. To that effect it provides information to help contextualize the URM problem in Utah as well as offering a wealth of information, case studies and lessons learned in the appendices.

The core recommendations are provided in an Executive Summary at the beginning of the document with follow-up details to those recommendations in Chapter 3.

Those recommendations are:

1. **Establish a URM Risk Reduction Program for Schools**
2. **Develop a Retrofit Program Focused on Government-Owned URM Structures**
3. **Implement a Statewide URM Risk Reduction Program**
4. **Consider Utah State Construction Code Enhancements**
5. **Study possible Utah State Construction Code – Local Amendments**

These recommendations recognize that a great deal of work will need to precede the formulation of Utah-specific policy development and offers recommendations for the various phases needed for implementing successful URM Risk Reduction strategies in our state.

Hopefully this publication will begin to bring together policymakers and communities and point us toward a common goal of Reducing our URM Risk.



Partially Collapsed Chimneys



Nominations Now Open for EERI Utah 2021 Board

The EERI Utah chapter has three board positions open for the 2021 for nominations.



- **President Elect**
 - The President-elect shall serve a term of one year. In addition, the President-elect shall subsequently serve a two-year term, one year-term as President and a **one**-year term as Past-President
- **Secretary/Treasurer**
 - The elected Secretary/Treasurer shall serve a term of two years. The Secretary/Treasurer is eligible to serve one additional two-year term.
- **Director at-Large**
 - Each elected Director at-large shall serve a term of two years. Directors at-large are eligible to serve one additional two-year term.

Please send nominations to Jordan Terry (Jordan.Terry@kpff.com) by November 30, 2020. We hope to have a finalized board by December 15, 2020.

Please reference the [Utah Chapter Bylaws](#) for more information about elections and the board.

2020 EERI Utah Chapter Leadership		
President	Craig Wilkinson	cwilkinson@reaveley.com
Vice President / President Elect	Jordan Terry	Jordan.Terry@kpff.com
Secretary/Treasurer	unfilled	
Past President	Chris Garris	cgarris@ce-labs.com
Director	Divya Chandrasekhar	chandrasekhar@arch.utah.edu
Director	Emily Kleber	ekleber@utah.gov
Director	Travis Gerber	travis@gerhartcole.com



March 2020 Magna Earthquake Clearinghouse

The Utah Geological Survey is collecting photos, videos, and documents relevant to the March 18, 2020 Magna Utah Earthquake. Please consider adding photos of observations to the free, online clearinghouse.

[March 2020 Magna Earthquake Clearinghouse](https://geodata.geology.utah.gov/pages/search.php?search=!collection609)
<https://geodata.geology.utah.gov/pages/search.php?search=!collection609>

2020 M5.7 Magna, Utah Earthquake Response
A digital clearinghouse for the March 18, 2020 M5.7 Magna, Utah earthquake and aftershock sequence to share and archive valuable information and data. Clearinghouses serve to provide data for post-event scientific and other investigations to improve our understanding of these events and how to deal with them. If you have items to submit to the clearinghouse, please email those items to Ben Erickson at ben Erickson@utah.gov. Additional information is available from the Utah Geological Survey, the University of Utah Seismograph Stations, the Utah Seismic Safety Commission (USSC), the Utah Division of Emergency Management, and from <https://earthquakes.utah.gov/>. Photos from the 1962 M5.2 Magna, Utah earthquake are available from the USSC.

776 resources Collection Order 48 per page Actions... Refine Results Page 1 of 17

Aerial UAV Reconnaissance photos by Adam I. Hiscock; Magna, Utah Earthquake Reconnaissance (RIN)g by Barry Welliver; Mobile Home Performance 2020 Magna M5.7 Earthquake 18 March 2020 Findings by Bruce Maison; Estimated Aftershock by Andrew J. Michael; County Ice Center and Salt Lake County Sh... photos by Jefferson Thomson.

Example of resources available from the March 2020 Magna Earthquake Clearinghouse. As of November 17, 2020 there were 776 resources available.



Announcement: ATC-20 Certification Training and Renewal

The Utah Safety Assessment Program (SAP) provides experienced professionals who can quickly evaluate damaged structures, identifying those that are safe for occupancy to which people can return, while marking those that are unsafe or have restricted use. It accepts civil, structural, geotechnical, and architect licenses from any state, along with ICC building inspector certifications.

The ATC-20 course covers rapid assessment of damaged buildings, which covers the requirements for placarding and instruction on identifying potential failures of structures after events from seismic, flooding and wind. This course also includes a field portion that examines buildings.

The ATC-20 course is offered several times a year and you may contact John Crofts for upcoming course offerings or request Crofts to help you to sponsor a training at your location. Once students have completed the FEMA ICS-100 course and completed the ATC-20 course, they are provided a certificate and photo credential as a Utah SAP representative.

The credential is required to be renewed every three years, and you may now renew your credential by passing an online exam with a score of 70% or higher. Exam questions are taken from materials provided at the ATC-20 course.

To renew your credential please contact the SAP Administrator, John Crofts, at jcrofts@utah.gov. Crofts will then email you a link with your online renewal exam. You may also contact Crofts for questions regarding hosting an ATC-20 class, updating contact information or any other general questions.

EERI Utah Chapter Events:

Have an upcoming webinar or conference you would like to let EERI Utah members know about? Send scheduling, connection, and a brief description of the event to Emily Kleber (ekleber@utah.gov) or tweet at our account @EERIUTAH.



[EERI Utah Twitter](#)

[EERI Utah Website](#)

Mark your calendars! The upcoming Utah Disaster Resilience Webinar Series events are decided, hosted by [the Utah Resilience Initiative](#). See flyer on the next page for the latest webinar scheduling and connection information.



CLIK IMAGE BELOW FOR REGISTRATION, OR VISIT

<https://utah.zoom.us/meeting/register/tJYscuysrDMqEtb63eTQ4hPmtzNkF1NoIJT5>



Department of
City and Metropolitan Planning
COLLEGE OF ARCHITECTURE + PLANNING | THE UNIVERSITY OF UTAH


Utah Resilience Webinar Series



Judith Mitrani-Reiser, Ph.D.
Associate Chief,
Materials and Structural Systems Division
Engineering Laboratory
National Institute of Standards and Technology

Statutory Programs Work Towards National Multi-Hazard Resilience

Thursday, December 03, 2020 - 4:00 to 5:00 pm MST

 Connect via Zoom:

<https://utah.zoom.us/meeting/register/tJYscuysrDMqEtb63eTQ4hPmtzNkF1NoIJT5>

Registration Required

Bio

Dr. Judith Mitrani-Reiser is the Associate Chief of the Materials and Structural Systems Division at the National Institute of Standards and Technology (NIST). Mitrani-Reiser provides leadership in the development and coordination of statutory processes for making buildings safer and oversees the National Construction Safety Team (NCST), National Earthquake Hazards Reduction Program (NEHRP), and the National Windstorm Impact Reduction Program (NWIRP). Mitrani-Reiser earned her B.S. from the University of Florida, M.S. from the University of California at Berkeley, and Ph.D. from the Caltech. Mitrani-Reiser is currently a member and a Director of the Earthquake Engineering Research Institute (EERI), on the Executive Committee and Expert Panel of CROSS-US and a member of the American Society of Civil Engineers (ASCE), where she co-founded SEI's Committee on Multi-Hazard Mitigation.





STRUCTURAL AND GEOTECHNICAL ENGINEERING SEMINAR

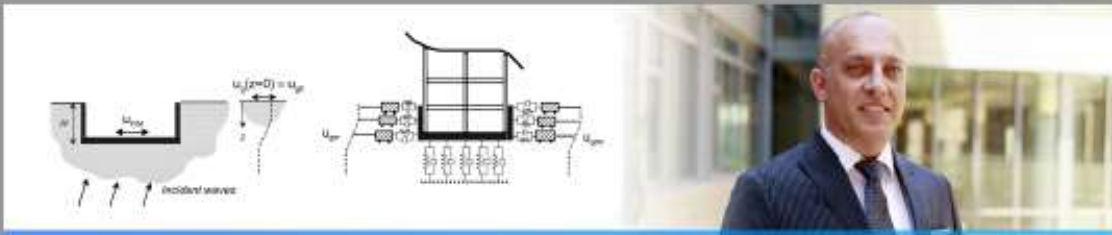
Seismic Earth Pressures, Liquefaction and Deep Foundation Performance Seminar

January 11th, 2021 - 11:00am to 1:00pm

Seminar to be hosted virtually

Log-in information provided as part of future registration details

Attendance \$20 per person with 2.0 Utah PDHs available



Guest Lecturer:

Scott J. Brandenburg, Ph.D, P.E., M. ASCE

ASCE EESD Chair & Professor of Civil and Environmental Engineering at UCLA

SEMINAR OBJECTIVES & OUTCOMES

- Offer an overview of seismic earth pressure theory and performance: past, present, and where research will be taking design in the future
- Characterize performance, from research and case studies, of deep foundations influenced by liquefaction and lateral spread during seismic events
- Remote attendance information to be provided as part of a separate announcement.



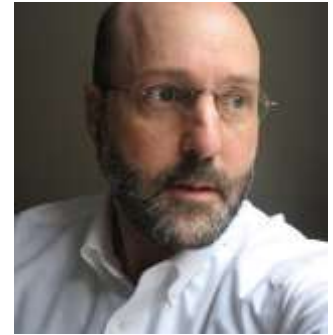
Contact SEAU for more information.



Recent Events:

November 12, 2020
4 – 5 PM MST

David Bonowitz
[EERI Distinguished Lecturer](#)
Miss the lecture? Check out David's Distinguished
Lecture Webinar on [EERI's YouTube Channel](#)



Helpful Earthquake Engineering Links:

Earthquake Engineering Research Institute (EERI) - Utah
National EERI

Structural Engineering Association of Utah (SEAU)

American Society of Civil Engineers (ASCE) – Utah
ASCE GEO-Institute

American Council of Engineering Companies (ACEC) - Utah

Seismological Society of America (SSA)

Southern California Earthquake Center (SCEC)

Utah Seismic Safety Commission (USSC)

Utah Geological Survey (UGS)

University of Utah Seismograph Stations

General Utah Earthquakes Webpage

Utah Division of Occupational and

Professional Licensure (DOPL)

United States Geological Society (USGS)

Be Ready Utah

Utah ShakeOut Website:

Homebuyer's Guide to Earthquake Hazards in Utah

<http://utah.eeri.org>

<http://www.eeri.org>

<http://www.seau.org>

<http://www.sections.asce.org/utah/>

<http://www.asce.org/geo/>

<http://www.acecutah.org>

<http://www.seismosoc.org>

<http://www.scec.org>

<http://ussc.utah.gov>

<https://geology.utah.gov/>

<https://quake.utah.edu/>

<https://earthquakes.utah.gov/>

<http://www.dopl.utah.gov>

<http://earthquake.usgs.gov/>

<http://www.utah.gov/beready/>

<http://www.shakeout.org/utah/>

<http://geology.utah.gov/online/pdf/pi-38.pdf>

EERI Utah Chapter is seeking articles and announcements for upcoming newsletter editions. Please forward submissions to be considered by the Utah Chapter leadership to Emily Kleber at ekleber@utah.gov

Utah Resilience Webinar Series

Infrastructure



David Bonowitz
Structural Engineer
EERI, Distinguished Lecturer, 2020

Functional Recovery: What it Means to Design for Community Resilience

Thursday, November 12, 2020 - 4:00 to 5:00 pm MST



Connect via Zoom:

<https://utah.zoom.us/join/joinmeeting/register/tJ0kfuitqD8jGNxJ7X1GOENQphuGrheiV2Cn>

Registration Required

Abstract

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 functional recovery - is not new, but 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 interested individuals can play in shaping this thinking into design practice with four sets of questions: definitional, technical, policy, and implementation.

Bio

David Bonowitz (M. EERI, 1994) is a leading structural engineer in San Francisco and is a member of the new working group of the Federal Emergency Management Agency - National Institute of Standards and Technology on Functional Recovery of the Built Environment and Critical Infrastructure. He is co-author of Functional Recovery: A Conceptual Framework, an EERI white paper and lead author of "Resilience-based Design and the NEHRP Provisions", now under review by the Provisions Update Committee of the National Earthquake Risk Reduction Program. Among other awards, he received the Distinguished Lecture Award 2020 from the EERI of the United States; award given to EERI members who have made outstanding contributions to reducing the risk of earthquakes.