

**National Earthquake Hazards Reduction Program (NEHRP)
Advisory Committee on Earthquake Hazards Reduction (ACEHR)
March 26-27, 2024 Hybrid Meeting Summary**

Attendees (listed alphabetically by category)

ACEHR Members

Lucy Arendt, Chair	St. Norbert College
Ann Bostrom*	University of Washington
Jeffrey Briggs	Missouri State Emergency Management Agency
Robert Carey	Utah Division of Emergency Management
David Cocke	Structural Focus
Michael Hamburger***	ACEHR ex-officio as SESAC Chair
Thomas Heausler	Consulting Structural Engineer
Tara Hutchinson	University of California, San Diego
Anne Meltzer*	Lehigh University
Danielle Mieler*	City of Alameda
Douglas Wiens	Washington University in St. Louis

NEHRP Agency Representatives

Luciana Astiz	National Science Foundation
Michael Blanpied*	United States Geological Survey
William Blanton*	Federal Emergency Management Agency
Tanya Brown-Giammanco**	National Institute of Standards and Technology
Tina Faecke (DFO)	National Institute of Standards and Technology
Jonathon Foster	Federal Emergency Management Agency
John “Jay” Harris	National Institute of Standards and Technology
Andrew Herseth*	Federal Emergency Management Agency
Daniel Linzell**	National Science Foundation
Steven McCabe*	National Institute of Standards and Technology
Jacqueline Meszaros	National Science Foundation
Thyagarajan Nandagopal**	National Science Foundation
Dena Smith-Nufio**	National Science Foundation
Mai (Mike) Tong	Federal Emergency Management Agency

Speakers and Registered Guests

Darrin Donato***	United States Department of Health and Human Services
Karyn Beebe*	International Code Council
Mitchell Berger**	United States Department of Health and Human Services
Daniel Kaniewski**	March McLennan
Caitlin Langfitt**	United States Department of Commerce
Janiele Maffei**	California Earthquake Authority
Michael Mahoney**	Applied Technology Council
Kristy Thompson**	National Institute of Standards and Technology
Martin Williams	American Public Works Association

*Attended remotely both days ** Attended Tuesday only ***Attended Wednesday only

I. Welcome

As Designated Federal Officer (DFO) for ACEHR (or Committee), Ms. Tina Faecke called the meeting to order at 9:00 a.m. EDT, took roll call for the Committee members, and confirmed the quorum requirement was satisfied. She announced the meeting will be recorded, reviewed some

meeting logistics, and then turned the meeting over to Dr. Jacqueline Meszaros, who introduced the three NSF Division Directors. Dr. Thyagarajan Nandagopal provided an overview of the geopolitical key technology areas of the Innovation and Technology Ecosystems Division within the Technology Directorate. After his remarks, the meeting was handed to Dr. Daniel Linzell for his introductory remarks and overview of the Engineering Directorate. Dr. Smith-Nufio provided an overview of the Geosciences Directorate work, thanked the Committee for their engagement and active participation, and emphasized the importance of the Committee's assessment.

The meeting was handed to the ACEHR Chair, Dr. Lucy Arendt, who asked if there were any questions. The Committee expressed their appreciation for NSF's support between the three Directorates and inquired about NSF's strategy for dealing with the recent budget cuts and how that could possibly impact their various research efforts. NSF responded they are developing a budget plan for OMB approval including potential scenarios to mitigate impacts to any Directorate. Although the Geosciences and Engineering Directorates provide the primary funding for NEHRP, funding is also provided by other Directorates within NSF.

Arendt expressed her appreciation to NSF for hosting this in-person meeting, thanked the Committee for their participation, and then she reviewed the meeting agenda and goals.

II. Annual Ethics Briefing

Ms. Caitlin Langfitt, ACEHR ethics advisor from the Department of Commerce Ethics Law and Programs Office gave the annual briefing on ethics rules for Special Government Employees, and thanked the Committee for completing and submitting their online financial disclosure forms prior to this meeting. Her presentation is available at <https://nehrp.gov/pdf/ACEHR%20Ethics%20Briefing%202024.pdf>.

III. Public Input Period

Committee DFO Faecke reported that one person, Mr. Michael Mahoney, registered to speak. After Mahoney's comments, Faecke turned the meeting over to the Acting NEHRP Director, Dr. John Harris.

IV. NEHRP (or Program) Responses to the 2023 ACEHR Report Recommendations

Harris thanked the Committee for their thorough assessment of the Program and for providing the September 30, 2023 report. Harris prefaced his presentation emphasizing the benefit of comprehending dialogue in a meaningful manner and the Program's goal to adjust processes to enhance the interactions between the agencies and the Committee over the biennial assessment cycle.

Two points were considered in developing the agency responses: 1) how each recommendation supports the FY22-29 NEHRP Strategic Plan and 2) the anticipated implementation time frame. Harris presented NEHRP agency responses

(<https://nehrp.gov/pdf/ACEHR%202023%20Recommendation%20Responses%20240319.pdf>) to the nine recommendations identified by the Committee in their September 2023 Biennial Report ([https://nehrp.gov/pdf/2023%20ACEHR%20Report%20-%2030%20Sept%20\(FINAL\).pdf](https://nehrp.gov/pdf/2023%20ACEHR%20Report%20-%2030%20Sept%20(FINAL).pdf)).

Questions were addressed following each recommendation response.

Discussion:

The Committee asked about budget cuts and how they might impact activities within each agency. Although the agencies received FY24 budget cuts, nothing has been determined yet whether or not those cuts will affect NEHRP activities within any agency.

The Committee asked the agencies to define “functional recovery” mentioned in the first response as “1e”. Harris discussed how “resilience-based” engineering is the umbrella to support community resilience. Functional recovery design, a component of resilience-based engineering, is at the component level of the built environment and a pre-earthquake design/retrofit methodology to minimize potential functionality downtime of community-prioritized buildings and potential interruptions of services provided by lifeline infrastructure. For example, if it is a small community and there is only one grocery store, you need to consider that building that houses the grocery store as a community priority building. Functional recovery design is a significant step in building codes as it provides a bridge between component-level resilience and community resilience. The discussion with ACEHR then focused on how emergency managers, who deal with actual post-earthquake recovery, have a definite definition for recovery and how “functional recovery” can be confusing to them and a new term may be needed.

After receiving a response to the second recommendation, a question was raised by the Committee asking how the agencies are addressing “disproportional impacts on different populations”? NIST hosted a national stakeholder workshop on functional recovery of transportation systems ([NIST Special Publication 1295](#)) which referenced how this sector interacts with different populations. A total lack of trust among the communities was emphasized and should be considered. In January 2023, FEMA published a guidance document for structural integrity and livability of buildings after disasters, as requested by the 115th United States Congress (2017-2018), titled *Guidance for Accelerated Building Reoccupancy Programs* ([FEMA P-2055-1](#)).

A comment was made that if we were able to develop ShakeMaps and a HAZUS run for areas less likely to have an earthquake, like Salt Lake City, and drive activities for public awareness and the legislative side based on non-speculation would be helpful for mitigation planning and emergency response. However, the specificity (county or regional breakdown) is lacking and outdated.

The Committee suggested holding more frequent scenarios and also asked what can be done to make scenarios more effective and efficient in addition to getting the specifics/numbers updated? This thought was placed on hold for future discussions. When communities haven’t experienced a significant event or don’t believe it will happen; scenarios would help them visualize how they could be affected. Part of the education portion could be helping communities develop their own scenario expanded to cover all hazards. Understanding the vulnerabilities of communities and how they interact during events is critical and may involve technical expertise for scenario development.

Offshore earthquake studies involve cooperation between earth and ocean science, and it can be difficult to get both sides on board for doing something expensive. The Committee asked for an update on the ocean science efforts related to earthquake science. NSF reported there are lots of ocean measurement efforts to compliment the land measurements. There are pilot stations offshore in Alaska and Cascadia and NSF anticipates these efforts to continue. USGS receives

contributions from various divisions in characterizing onshore/offshore projects in addition to the landslide project.

Regarding the response to recommendation five, a question was raised by the Committee asking if the 2023 Turkey-Syria earthquake sequence review will include discussion of potential improvements in terms of the speed in which people react during international earthquake disasters. USGS said they were happy with the response time for Turkey; however, sometimes it can be difficult for federal employees to travel internationally.

Several comments were made by the Committee expressing their appreciation and gratitude to the agencies on the thinking, organization, and references back to the NEHRP Strategic Plan in providing their responses to the recommendations. ACEHR is looking forward to seeing the NEHRP management plan as it takes shape as it relates to effectiveness, in particular.

V. Earthquake Insurance Presentations

The first presentation on *Overview of Insurance to Support Resilience* was given by Mr. Daniel Kaniewski, Managing Director, Public Sector, Marsh McLennan. Kaniewski provided an overview of insurance options in relation to resilience. His presentation is available at <https://nehrp.gov/pdf/ACEHR%20Marsh%20McLennan%20Resilience%203-26-24.pdf>.

Discussion:

The Committee asked how available is parametric insurance and what is the cost? Kaniewski responded parametric insurance is generally available, but is it not generally well known. There needs to be a greater demand signal, whether from the public or private sector or both. Educating the critical infrastructure owners and operators about this insurance could create more opportunity for parametric insurance. You can receive a price quote tailored to your specific needs. Another option is for a parametric policy to play a role within the types of insurance you already have. Kaniewski suggested speaking with a broker to help you sort through the various options and cost to meet your needs. As a reminder, it was noted that all insurance is regulated at the state level, and each state has their own regulations with regard to all types of insurance. Kaniewski said one question that requires a deeper dive is whether or not there is sufficient reinsurance capacity to take on a higher take-up following a catastrophic event in the U.S. Arendt commented that in the FEMA P2090/NIST SP1254 functional recovery report commissioned by Congress, there is a chapter on financing, and parametric insurance is listed as one of the possibilities that might be considered along with several other pieces.

The second presentation on *Earthquake Insurance in California Overview* was given by Ms. Janiele Maffei, Chief Mitigation Officer, California Earthquake Authority (CEA). She talked about insurability and integrating mitigation into the earthquake insurance model. Her presentation is available at <https://nehrp.gov/pdf/240326%20ACEHR%20Mit%20Ins%20presentation.pdf>.

Discussion:

The Committee asked for clarification on the sale process of CEA insurance and the appropriate people to contact and when. Maffei responded that everybody who writes policies has to send a mandatory offer letter every two years to their homeowner's policy insurer which states earthquake insurance is available to you for "x" amount of dollars (premium). If the insurer contacts their agent, they can buy a CEA policy through their agent or they can decline. The

insurer can also go to another company that offers the insurance themselves or they can switch to one of the companies that has their own earthquake insurance. CEA encourages homeowners to shop around because they are not always the most cost effective. Maffei also reminded everyone that their program, by statute, is required to be offered to all Californians when CEA opens registration. CEA started in four zip codes and it has grown but not in every county of zip code in the State of California, just in areas of high hazard. Homeowners don't have to be insured to be part of the CEA program. Maffei also stated that people are not dropping their insurance once they are retrofit.

It was mentioned that ACEHR is tasked with looking at the design approach in earthquake engineering towards functional recovery, which is a boundary that is crossed among the agencies. Related to that, a question was raised regarding Maffei's idea of insurability and habitability and whether they are parallel towards functionality. In other words, if a residential structure is habitable, then is it functional? In terms of insurance, habitable might be as far as they can go, but those terms need to be clearly defined.

IV. Closing Remarks

Prior to meeting tomorrow, Arendt encouraged everyone to review the NEHRP website at <https://nehrp.gov/> and jot down some high-level ideas of what you think would make it more user-centered to facilitate tomorrow's discussion. The Committee asked who is currently using the website. Faecke responded that based on recent Google analytic reports, stakeholders and Congressional staffers utilize the NEHRP website to search for technical reports. Other agencies also link to the website. Arendt provided the below thoughts for the Committee to consider as they review the current website:

- what priorities do we have for updating this website;
- how do we think people interact with it or should interact with it;
- what are the "big links" that ought to be on the home page;
- what is it that we think is most important
- optimization for the mobile user;
- consider the target audience or demographics of the future user of the website; and,
- how many clicks do you want to make before getting to the information you need?

Arendt expressed her sincere gratitude to each of the agencies for their hard work on the responses and also thanked everyone for their engagement, participation, and commitment.

V. Adjournment for the Day

Faecke reminded everyone to bring their NSF visitor badge with them tomorrow and then officially adjourned the meeting at 5:00 p.m. EDT.

ACEHR MEETING SUMMARY – Day Two

March 27, 2024

I. Call to Order and Opening Remarks

Committee DFO Faecke called the meeting to order at 9:00 a.m. EDT, took roll call for the Committee members, and confirmed the quorum requirement was satisfied. She reminded everyone the meeting will be recorded.

Arendt reminded the Committee their task today is to discuss what might be included in their 2025 report, which is due to the NIST Director by September 30. She also announced that based on responses received from the recent meeting poll, a two-day virtual ACEHR meeting will be held on June 12-13, 2024 from 1:30-4:30 p.m. EDT to receive agency updates.

II. Preparedness and Response Presentation

Mr. Darrin Donato, Chief, Domestic Policy Branch, Division of Policy, Office of Strategy, Policy, Planning, and Requirements, Administration for Strategic Preparedness and Response (ASPR), within the Department of Health and Human Services in Washington, DC gave an overview of ASPR. His presentation is available at

https://nehrp.gov/pdf/DDonato_ASPR%20Overview_Pres_ACEHR%20mtg_3-27-2024.pdf.

Discussion:

Harris noted two ASPR areas that are closely related to the NEHRP agency activities, transportation and grants. Donato responded that currently ASPR has interests in the areas of climate change, flood, critical infrastructure, disaster risk reduction, mitigation, and resilience. The Committee asked about ASPR's interagency coordination to avoid duplication efforts, such as the National Institutes of Health (NIH) Disaster Research Response (DR2) Program specifically. Donato said duplication efforts and gaps are identified in advance and ASPR coordinates with applicable federal agencies and the White House to ensure ASPR's efforts are complimentary instead of duplicative. A question was raised regarding the longevity of ASPR volunteer staff activity regarding support for communities following a disaster. In response, Donato noted that ASPR has a recovery office and is the lead for the health and social services recovery support function (national disaster recovery framework). ASPR still has recovery staff working in Puerto Rico, and the longevity of deployed staff is dependent on the assessment made after deployment activation. In addition to volunteers, federal staff is utilized by ASPR as well as medically trained public health service officers who can be deployed for much longer periods (months or years). Arendt asked if ACEHR could draw upon the insights of ASPR advisory committee members prior to developing the ACEHR recommendations with regards to functional recovery for vulnerable and underrepresented communities. Donato agrees there is a potential partnership and synergy between ACEHR and the ASPR advisory committees. As a continuation of this topic, it was suggested that ASPR provide a collective subject-matter presentation during a future ACEHR meeting. ASPR also collaborates with FEMA on building codes and standards.

III. NEHRP Website Discussion

Arendt led a discussion regarding the current NEHRP website. The NIST Engineering Laboratory Information Coordinator, Mrs. Kristy Thompson, briefly described her role managing the current website in Drupal. The consensus from the Committee for the website facelift was simplicity, accessibility, and an information hub for stakeholders to access documents, the roles and responsibilities for the four NEHRP agencies, and the advisory committee. Three potential website models were identified by the Committee:

- EERI (<https://www.eeri.org>) for the simplicity, but not the same purpose/focus as NEHRP;
- University of Washington (<https://www.hcde.washington.edu/>) for a good design model; and,
- USGS Earthquake Hazards Program (<https://www.usgs.gov/programs/earthquake-hazards>).

Listed below are some overall comments and edits for the home page:

- technically antiquated in terms of a computer or mobile screen appearance;
- reduce the overall number of links and text and increase the graphics, rotated frequently;
- headers for the sections on the home page are not “clickable” which is odd from a contemporary perspective;
- highlight current and ongoing earthquake investigation activities;
- include a graphic (i.e., responders helping others) and brief summary of what NEHRP and ACEHR are and their relationships between the four agencies; and,
- identify what messages and visuals related to the Program you want to convey to the audience as their “first impression” of NEHRP.

Current home page contents or features the Committee wants to maintain include:

- direct access to NEHRP reports and ACEHR documents;
- NEHRP agency logos with links; and,
- limited “clicks” from the home page for stakeholders to get what they want.

IV. Scientific Earthquake Studies Advisory Committee (SESAC) Updates

Dr. Michael Hamburger, SESAC Chair and ACEHR ex-officio member, provided a brief update of the SESAC activities and the January 8, 2024 USGS response to SESAC’s September 2023 annual report. On December 21, 2023, SESAC submitted a special report expressing the Committee’s deep concern over the state of USGS Human Resource (HR) support for recruitment and hiring of staff for the USGS Earthquake Hazard Program (EHP). USGS provided a response letter on March 5, 2024. All SESAC reports and USGS letter responses are available at <https://www.usgs.gov/programs/earthquake-hazards/scientific-earthquake-studies-advisory-committee-sesac>.

Discussion:

The Committee inquired why the HR problems were not recognized and addressed prior to SESAC submitting their special report. Hamburger noted the issue was mentioned in SESAC’s last two annual reports and highlighted during the November 2023 meeting and then became a very critical issue and concerns regarding a large number of open scientific positions. The HR division also experienced a significant number of vacancies and changes in policy interpretations.

V. 2025 ACEHR Biennial Report Discussion

Dr. Thomas Heausler compared the total number of recommendations provided in the last three (2019, 2021, and 2023) ACEHR biennial reports compared to the last SESAC annual report. Dr. Tara Hutchinson suggested that once the four agencies provide their updates during the June meeting, the Committee could review the last three biennial reports and agency responses to determine which topics need to be outlined in the next report. The Committee asked if their evaluation of the Strategic Plan goals and objectives is valuable to the agencies and whether it should be included in each biennial report. Arendt encouraged the Committee to focus on the message they want to communicate to the agencies. The following topics were discussed for consideration in the 2025 biennial report or possible future ACEHR meeting presentations:

- a matrix cross walking the ACEHR recommendations with agency responses and progress made;
- central and eastern United States issues;

- existing buildings;
- NEHRP management plan priorities and success measurements;
- GAO report recommendations;
- emerging issues;
- NEHRP reauthorization in terms of what NEHRP might be directed to do;
- national risk assessment and the implementation gap;
- lifelines and how it contributes to community resilience; and,
- acknowledgement of what the agencies have accomplished in response to ACEHR recommendations.

During the next ACEHR meeting, there was Committee consensus for the agencies to provide feedback on the Committee's biennial report process, the outcome (what is useful or practical), and how the report could add more value for the agencies, as well as identifying gaps in research or areas that ACEHR should emphasize in their report. Hamburger noted it is helpful if the agencies identify any key challenges/barriers preventing them from effectively doing their work. It was noted that it would be useful if the Committee knew whether they were effectively reaching the appropriate audience beyond the four agencies. Mr. David Cocke suggested identifying Committee milestones for accomplishing the next biennial report. Arendt encouraged the Committee members to provide feedback to her on the new agency reporting cycle.

VI. Closing Remarks

Arendt expressed her appreciation for the time and investment of the Committee participants and NEHRP agency representatives. The next ACEHR meeting will be held virtually 1:30-4:30 p.m. EDT each day on June 12 and 13.

VII. Adjournment

Faecke thanked everyone for their participation and adjourned the meeting at 2:00 p.m. EDT.