**NHERI- Network Independent Advisory Committee (NIAC)**

**Virtual Meeting Topic: NIAC 1st Meeting in Year-5**

**Date/Time:** Apr 20, 2021 05:00 PM Eastern Time (US and Canada)

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**Zoom Meeting Details**

Topic: NIAC Meeting  
Time: Apr 20, 2021 05:00 PM Eastern Time (US and Canada)

Join Zoom Meeting  
https://DesignSafe-ci.zoom.us/j/94923996303

Meeting ID: 949 2399 6303
One tap mobile  
+13017158592,,94923996303# US (Washington DC)  
+13126266799,,94923996303# US (Chicago)

Dial by your location  
+1 301 715 8592 US (Washington DC)  
+1 312 626 6799 US (Chicago)  
+1 646 558 8656 US (New York)  
+1 253 215 8782 US (Tacoma)  
+1 346 248 7799 US (Houston)  
+1 669 900 6833 US (San Jose)

Meeting ID: 949 2399 6303
Find your local number: https://DesignSafe-ci.zoom.us/u/aYTCCIazf

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**Minutes**

1. (10’) Welcome, Attendance and Review of action items and approval of the previously distributed Minutes of the 6-29-20 Meeting (Bill Hansmire)  
   Those present approved minutes of 6-29-20 without objections.

2. (20’) NCO Update and Plans for Renewal Period (Julio Ramirez, JoAnn Browning, Cheryl Ann Blain and Bill Holmes) (Slides will be distributed prior to the meeting)  
   a. Governance (Julio)  
   b. Science Plan (Julio)  
   c. Education (JoAnn)  
   d. Communications (Cheryl Ann)  
   e. Technology Transfer Committee (Bill Holmes)

   The update report is attached to these Minutes. The NCO renewal proposal was submitted to NSF on 4/1/21. The SimCenter and RAPID proposals went in this week. All other components have been renewed. The period of the renewal is to 9/30/25.

**Action Item 1:** Julio will coordinate a virtual meeting of the NIAC with NHERI components during the Summer Institute, June 16-17, 2021. The format would be to group facilities by common emphasis, i.e. wind research labs, geotech, earthquake and cyber with Converge. Participants in each group will be given an estimate of 10-minutes/each for specific discussion.

**Action Item 2:** Julio will contact the User Forum to confirm the interest for a joint meeting and try to identify time after final schedule for the SI is known.

**Action Item 3:** JoAnn will distribute to the NIAC the final schedule/agenda for the Summer Institute as soon as it is finalized.
3. (5’) NHERI Status during COVID-19 (Julio Ramirez)
   All NHERI components are open for business under the restrictions of the State and Institution with regard to COVID-19. During the more restricted time, the NHERI components switched to remote operations. Gradually, the laboratories have opened to outside researchers under restrictions of mask wearing, testing, social distancing etc.

4. (20’) NIAC Plans for Year 5 (All)
   a. Membership Update
      Caro Shield and Glenn Rix were welcomed as new members.
   b. Priorities
      • Interact with TTC committee
      • Participate in the planning of the NHERI researchers meeting for 2022
      • Participate in the NHERI Science Plan Workshop in 2022
      • Develop annual report for the period of June 2020 to July 2021 to the NCO. The report is due in October 2021.
      • Other...
   c. Annual Report to NCO
      NIAC agreed to convene virtually in executive session during the Summer Institute.
   d. Activities- Meeting schedule and Agenda Items

5. (5’) New Business

6. Adjourn
   Meeting adjourned at 6:30 PM Eastern. John van de Lindt moved and Lesley seconded the motion.
NIAC Meeting Report

NHERI-NCO
NHERI-Network Coordination Office
Dr. Julio Ramirez
Kettelhut Professor in Civil Engineering
PI, Director NHERI-NCO
CMMI-1612144

April 20th, 2021 | 17:00 - 18:00 EST
NSF’s Facilities/Programs

Purdue University
Network Coordination Office
NSF Award #1612144

UC Berkeley
Computational Simulation
NSF Award #1612843

University of Colorado Boulder
Extreme Event Reconnaissance Coordination
NSF Award #1841338

University of Washington
Natural Hazards Reconnaissance Equipment
NSF Award # 1611820

Oregon State University
Wave Basin and Flume
NSF Award # 1519679

University of Texas, Austin
Mobile Field Shakers
NSF Award #1520808

University of Texas, Austin
Community Cyberinfrastructure
NSF Award #1520817

Florida International University
Wind Simulation
NSF Award #1520853

University of Florida
Wind Simulation
NSF Award #1520843

UC Davis
Geotechnical Centrifuges
NSF Award #1520581

UC San Diego
Large Outdoor Shake Table
NSF Award #1520765

Lehigh University
Hybrid Simulation
NSF Award #1520765
NHERI Science Plan Purpose

A 5-year roadmap for high-impact, high-reward hazard engineering research at NHERI facilities

Three Grand Challenges Remind Us Why NHERI Is So Vital

• Identify and quantify the characteristics of earthquakes, windstorms, and associated hazards (e.g., tsunami, surge, waves)
• Evaluate physical vulnerability of civil infrastructure and social vulnerability of populations in exposed communities
• Create technologies and tools to design, construct, retrofit, and operate sustainable infrastructure resilient to multiple hazards
Update NHERI Science Plan

In 2021-2022, we will convene an NCO Science Plan Task Group to:

1) incorporate more holistically all aspects of social science that relate to community resilience to natural hazards

2) fully engage the research performed by the NSF-funded Extreme Event Reconnaissance/Research networks

3) encourage utilization of the powerful simulation tools developed by the SimCenter and hosted at DesignSafe
NHERI Researchers Meeting 2022

• Meeting objectives:
  – Bring earthquake, wind and coastal engineering, and social sciences together
  – Disseminate NHERI research impact
  – Build partnerships with other organizations and federal agencies

• Venue: DC area (Hybrid?)

• Date: June 2022 or Oct. 2022

• Form Governance Task Group to plan meeting
NHERI Facility Dashboard

• The NCO Facility Scheduling and Operations Coordinator (FSOC) deploys *up to date schedule information* with *clear and transparent procedures* for users to access experimental facilities, and *facility resources* through a *centralized scheduling platform* in DesignSafe-CI.
A streamlined and fully integrated in DesignSafe-CI scheduling dashboard deployed with the start of the renewal.
Implementation of NHERI wide use metrics

In 2021, we will implement agreed upon common metrics collected every 6 months (NSF NHERI reporting period)

1) UTILIZATION- Calendar Days [Target 50% Science Days/reporting period (182 days)]
   a. Science
   b. ECO
   c. Inspection
   d. Out of Service: repair, or maintenance or not in service

2) USER- LAB Data: name, role (grad student, postdoc, PI, etc.), project, demographic info...
Research Collaboration
US-Japan

- Access to Facilities
  - Testing Techniques
  - Condition Assessment
- Research Coordination Program
- Data Exchanges and Computational Simulation
- Educational and Outreach Activities
## Collaboration Data Sets

### NIED/E-Defense and NEES

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Project PI</th>
<th>Project Description</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Defense Shake Table Experiments (NEES)</td>
<td>Packard, Mike</td>
<td>View Description</td>
<td>2/23/2012</td>
</tr>
<tr>
<td>International Hybrid Simulation of Tomorrow’s Braced Frame Systems (NEES)</td>
<td>Lehman, Dawn</td>
<td>View Description</td>
<td>10/15/2004</td>
</tr>
<tr>
<td>Large-Scale Validation of Seismic Performance of Bridge Columns (NEES)</td>
<td>Restrepo, Jose</td>
<td>View Description</td>
<td>9/1/2007</td>
</tr>
<tr>
<td>Novel Embedded Diagnostics Wireless Structural Monitoring Systems (NEES)</td>
<td>Kremeniljan, Anne</td>
<td>View Description</td>
<td>7/1/2012</td>
</tr>
<tr>
<td>NEES E-Defense: Seismic Performance of Interlocking Spiral Columns and Rectangular Columns Based on Shake Table Tests (NEES)</td>
<td>Mahin, Stephen</td>
<td>View Description</td>
<td>8/31/2006</td>
</tr>
<tr>
<td>Controlled Rocking of Steel-Frame Buildings (NEES)</td>
<td>Deierlein, Gregory</td>
<td>View Description</td>
<td>1/1/2005</td>
</tr>
<tr>
<td>U.S. Instrumentation and Data Processing of a Large-Scale Experiment on Soil-Structure Interaction of Underground Structures on the E-Defense Shake Table in Miki, Japan (NEES)</td>
<td>Lemntz, Anne</td>
<td>View Description</td>
<td>11/15/2011</td>
</tr>
<tr>
<td>Development of a Performance-Based Seismic Design Philosophy for Mid-Rise Woodframe Construction (Capstone test) (NEES)</td>
<td>van de Lindt, John</td>
<td>View Description</td>
<td>6/30/2009</td>
</tr>
<tr>
<td>E-Defense Shake Table Experiments 2016 (NEES)</td>
<td>Lemntz, Anne</td>
<td>View Description</td>
<td>2/23/2012</td>
</tr>
</tbody>
</table>

At E-Defense, shake table tests were performed on a 5-story full scale steel moment frame building isolated with triple pendulum bearings. The isolation system consisted of 9 bearings, one beneath each column of the building.
Test #1 Tokyo Metropolitan Resilience Project --Wood Homes--
Prof. Nagae, Feb 2019)

RAPID/Collaborative Research: Japan-U.S. Collaboration on the Seismic Resilience of Wood-frame Building Systems--
PI: Prof. Koliou, Award No. 1829433
Test #2 Tokyo Metropolitan Resilience Project - RC Structure -
PI: Prof. Kusunoki, Dec. 2019

RAPID/Collaborative Research: Japan-U.S. Collaboration on the Seismic Performance of Reinforced Concrete Structures-
PI: Prof. Calvi, Award No. 2000478
PI: Prof. Moustafa, Award No. 2000560
Test #3 Tokyo Metropolitan Resilience Project- December 2020- Steel Structure- PI: Prof. Kurata, Dec. 2020

Technology Transfer Committee

Bill Holmes
Chair TTC
NHERI-NCO
NHERI-Network Coordination Office
CMMI-1612144
Purpose and Composition

• Purpose: To encourage implementation of NHERI research, particularly for young researchers or others not familiar with implementation paths.

• The committee is composed of 18 volunteers knowledgeable of methods of implementation of research relating to seismic, wind, hurricane, and tsunami hazards.
Activities

• The committee developed a “white paper,” *Common Mechanisms for Implementation of NHERI Research Results*, that documents the typical methods of implementing research. Distribution of the paper is targeted at young researchers.

• In the last year, the committee completed a review of abstracts of the 82 active NSF grants and selected 25 as having results that are potentially implementable.
  – PI’s were contacted and implementation discussed.
  – Short draft summaries were prepared for each project and existing implementation plans and additional possibilities documented.
  – An informal report of these contacts is being prepared including overall conclusions regarding
    • Current knowledge and interest among NHERI researchers about implementation
    • Potential activities of the TTC to improve effectiveness.
Preliminary Conclusions of Study

• NSF’s mission is to develop fundamental research and a knowledge base and does not emphasize immediate implementation.
• Most researchers in the study group were aware of implementation paths.
• Most researchers understand that there is typically an intermediate step between research and implementation and there is seldom funding available for this step.
TTC Plans for Renewal Period

• Educate young researchers regarding implementation paths using the available “white paper.”

• Review progress of NSF NHERI Awards for implementation potential. Offer assistance to researchers.

• Extend the TTC reach into social science and the activity of CONVERGE.
THE NHERI NETWORK IS SUPPORTED BY MULTIPLE GRANTS FROM THE NATIONAL SCIENCE FOUNDATION.
<table>
<thead>
<tr>
<th>Time</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am-9:00am</td>
<td>Registration&lt;br&gt;Please virtually sign in and complete your COVID-19 symptom check before breakfast at Bit.ly/NHERISummerInstitute_Registration.</td>
<td>UTSA Downtown Campus, Durango Building – Virtual</td>
</tr>
<tr>
<td>8:00am-9:00am</td>
<td>Breakfast</td>
<td>4th Floor Terrace</td>
</tr>
<tr>
<td>9:00am-10:00am</td>
<td>*Welcome &amp; NHERI Overview&lt;br&gt;&lt;br&gt;<strong>Presenter:</strong> JoAnn Browning&lt;br&gt;Dean, College of Engineering, University of Texas at San Antonio</td>
<td>Riverwalk Room B</td>
</tr>
<tr>
<td></td>
<td>Following a welcome by the NCO-ECO lead, participants will learn about the NHERI network, receive an overview of the Summer Institute objectives, and meet each other and their collaborative research group.</td>
<td></td>
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<tr>
<td>10:00am-10:45am</td>
<td>*NHERI Site Introduction &amp; Panel&lt;br&gt;&lt;br&gt;<strong>Presenters:</strong> NHERI Site Representatives</td>
<td>Riverwalk Room B</td>
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<tr>
<td></td>
<td>Attendees will watch NHERI site videos followed by a panel of NHERI site representatives that addresses virtual questions posed in chat during the introduction and from the Institute pre-assessment.</td>
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<tr>
<td>10:45am-11:00am</td>
<td>Coffee &amp; NHERI Networking Break</td>
<td>4th Floor Terrace and Riverwalk Room B</td>
</tr>
<tr>
<td>11:00am-12:00pm</td>
<td>*NHERI Science Plan Discussion&lt;br&gt;&lt;br&gt;<strong>Presenter:</strong> Billy Edge&lt;br&gt;Professor Emeritus, Texas A&amp;M University</td>
<td>Riverwalk Room B</td>
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<td></td>
<td>Attendees will participate in an introduction, overview, and discussion of the NHERI Science Plan to address pressing research needs for the natural hazards community.</td>
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<tr>
<td>12:00pm-1:00pm</td>
<td>Networking Lunch &amp; Working Groups</td>
<td>4th Floor Terrace</td>
</tr>
<tr>
<td>1:00pm-2:15pm</td>
<td>*Grant Writing Workshop – Research 101&lt;br&gt;&lt;br&gt;<strong>Presenter:</strong> Joy M. Pauschke&lt;br&gt;Program Director, National Science Foundation</td>
<td>Riverwalk Room B</td>
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<tr>
<td></td>
<td>Attendees meet with NSF Program Director about their research with a focus on research merit, overview of research activities and resources, and broader impacts.</td>
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<tr>
<td>2:15pm-2:30pm</td>
<td>Networking Break &amp; Working Groups</td>
<td>Riverwalk Room B</td>
</tr>
<tr>
<td>2:30pm-3:30pm</td>
<td>*Interdisciplinary NSF CAREER Awardee Panel&lt;br&gt;&lt;br&gt;<strong>Presenters:</strong> Jennifer Bridge, the University of Florida, Arindam Chowdhury, Florida International University, Teja Guda, the University of Texas at San Antonio, Gabriela Romero-Uribe, the University of Texas at San Antonio, and (Forest Masters, Elaina Sutley, or Stephanie Paal)</td>
<td>Riverwalk Room B</td>
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### Collaborative Proposal Writing Groups & NHERI Networking

Attendees will collaboratively design a research proposal which incorporates NHERI experimental facility (EF), simulation center, cyber infrastructure, and RAPID resources as well as educational and social science components to engage the broader impacts of the proposed work.

<table>
<thead>
<tr>
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<th>Location</th>
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<tbody>
<tr>
<td>3:30pm-5:30pm</td>
<td><strong>Collaborative Proposal Writing Groups &amp; NHERI Networking</strong></td>
<td>La Villita, All</td>
</tr>
<tr>
<td></td>
<td>Attendees will collaboratively design a research proposal which incorporates</td>
<td>Riverwalk Rooms</td>
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<td>NHERI experimental facility (EF), simulation center, cyber infrastructure,</td>
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<td>to engage the broader impacts of the proposed work.</td>
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### *User Forum Networking Event*

**Presenter:** Stephanie Smallegan  
User Forum Chair, University of Southern Alabama

Attendees will learn about the User Forum and have opportunities to network. Appetizers will be provided.

<table>
<thead>
<tr>
<th>Time</th>
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<th>Location</th>
</tr>
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<tbody>
<tr>
<td>6:00pm-7:00pm</td>
<td><strong>User Forum Networking Event</strong></td>
<td>TBD</td>
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<tr>
<td></td>
<td><em>Presenter:</em> Stephanie Smallegan</td>
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<tr>
<td></td>
<td>User Forum Chair, University of Southern Alabama</td>
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### NHERI Summer Institute Day 2  
Thursday, June 17, 2020

<table>
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</table>
| 7:30am-8:30am   | **Registration**  
Please virtually sign in and complete your COVID-19 symptom check before breakfast at Bit.ly/NHERISummerInstitute_Registration. | UTSA Downtown Campus, Durango Building – Virtual |
| 8:00am-8:30am   | **Breakfast**                                                        | 4th Floor Terrace         |
| 8:30am-9:30am   | **Broader Impacts Design**                                             | Riverwalk Room B          |
|                 | **Presenter:** Karina I. Vielma & Robin Nelson                             |                           |
|                 | Educational Specialist, University of Texas at San Antonio                 |                           |
|                 | Participants will learn to include broader impacts that address diversity,  |                           |
|                 | equity, and inclusion within a grant proposal and creatively link the      |                           |
|                 | proposed research with a meaningful outreach initiative.                  |                           |
| 9:30am-10:45am  | **Proposal Working Meetings**                                            | La Villita Room, All      |
|                 | Attendees will collaboratively design a research proposal which incorporates | Riverwalk Rooms           |
|                 | NHERI experimental facility (EF), simulation center, cyber infrastructure,  |                           |
|                 | and RAPID resources as well as educational and social science components  |                           |
|                 | to engage the broader impacts of the proposed work.                      |                           |
| 10:45am-12:30pm | **Proposal Presentations**                                               | La Villita Room           |
| 12:30pm-12:45pm | **Networking Lunch**                                                     | 4th Floor Terrace         |
| 12:45pm-1:30pm  | **Awards, Reflection, and Concluding Remarks**                            | La Villita Room           |

* All presentations will be streamed and recorded for our online early-career faculty attendees. Each recorded session will be placed on PheedLoop for on-demand viewing after the event.