

NHERI- Network Independent Advisory Committee (NIAC)

Topic: NIAC 4th Meeting in Year-2

Location: Summer Institute San Antonio, TX

Room: El Paseo

Time: June 6, 2018 -- 1:30-4:30 PM CT

Webex Meeting Details:

Title: NIAC Meeting in SA during Summer Institute

Location: <https://purdue.webex.com/purdue>

When: Wed 6 Jun 2018 2:30 PM – 5:30 PM Eastern (1:30 PM – 4:30 PM Central)

Organizer: webex <messenger@webex.com>

JOIN WEBEX MEETING <https://purdue.webex.com/purdue/j.php?MTID=m56ecf3990cbf4de11e0a24badca11e6a>

Meeting number (access code): 312 792 526 Host key: not displayed Meeting password: 39PQHSm9 JOIN BY PHONE

Description: +1-855-282-6330 US TOLL FREE +1-415-655-0003 US TOLL Toll-free dialing restrictions:

https://www.webex.com/pdf/tollfree_restrictions.pdf Can't join the meeting? Contact support here:

<https://purdue.webex.com/purdue/mc>

Minutes

1. Welcome, Attendance and Review of action items and approval of the previously distributed Minutes of the 2-9-18 Meeting (John van de Lindt)

Present at the meeting were- NIAC Attendance: Lesley Ewing, Bill Hansmire, Catherine Petroff, John van de Lindt, and Richard Woods; Cheryl Ann Blain, JoAnn Browning, and Julio Ramirez, Network Coordination Office (NCO). Guest: Joy Pauschke, National Science Foundation (NSF).

Minutes were approved as distributed.

2. NSF Remarks (Joy Pauschke) (joining remotely)

No items. Only a clarification that this committee provides advise to this award, NHERI.

3. User Forum Report (User Forum Representatives)

This portion of the meeting was held jointly with the User Forum at 1:30 PM. The User Forum began with its preliminary report on the User Satisfaction Survey. At this time, the personal interviews as follow-up to the electronic survey are still being conducted. However, based on the more than 100 responses to the survey, the following items can be discerned:

- One complaint regarding access to facilities was received.
- Several expressed concerns with the speed of designsafe-ci.
- Data re-use should be emphasized.

The User Forum will continue efforts to increase the response rate in future years. During the joint session, additional items discussed were:

- The Technology Transfer Committee is currently reviewing projects trying to identify those closer to possible implementation. The goal would be to promote them amongst the relevant committees and societies in charge of this activity.
- It would be important to identify the impact of data re-use in practice/design. How about an article in a journal from ACI, ASCE or EERI on this topic? Civil Engineering Magazine was suggested since all ASCE members receive this publication.
- Use the podcasts to document impact.

The joint session adjourned at 2:30 PM. The NIAC reconvened at 2:45 PM to continue with item 2 of the Agenda after the approval of the minutes.

4. NCO Annual Report Highlights and NHERI Priorities in Y3, including an update on utilization of the facilities and lessons learned, REU program organization and Summer Institute Y2 (Julio Ramirez and JoAnn Browning).

Julio, JoAnn and Cheryl Ann presented the NCO Annual Report (slides attached to these minutes). The NIAC followed up with the following discussion and questions:

- Can we identify the users of the laboratories with respect to experience (new or experts), internal vs external? How about users (definition?) of the SimCenter? Are they tracking these users? How about DesignSafe-CI? Are they tracking Core-usage time? NIAC was not sure what the best metric would be, but felt it was likely that DesignSafe-CI was already tracking some metric for their own use.
- Append the User Satisfaction Survey for this year to the Minutes.
- The TTC is also a partnership between NHERI and the members as they potentially could benefit from the information collected.
- The NIAC gave positive feedback to the NCO on the network activities.

Action Item: NCO- contact SimCenter and DesignSafe for responses to the questions.

Action Item: NIAC- send suggestions/nominations of individuals to join the Technology Transfer Committee (TTC).

Action Item: NCO- provide user satisfaction survey for this year.

Response: survey can be found at the link below. It will be kept open for a few weeks more so that you may visit the site and review/print it.

https://okstatecas.co1.qualtrics.com/jfe/form/SV_0VQS2y2HnoUmlpP

5. NIAC Plans for Y3 (All)

- a. Year 2 Report

Action Item: John and Bill Hansmire will prepare an outline of the report for review by the NIAC within the next 2 weeks.

- b. Membership

Action Item: the committee agreed to continue with its current membership.

- c. Priorities

Provide input to the Science Plan and the NCO-NHERI.

d. Activities

6. Schedule of Meetings in Y3

Next quarter meeting via remote participation.

Next face to face at the Summer Institute in Year 3.

Action Item: Julio to send a whenisgood poll for the second and third week in September 2018.

7. New Business

8. Adjourn: Meeting adjourned at 4:50 PM.

Natural Hazards Engineering Research Infrastructure (NHERI)

NHERI-Network Coordination Office **NHERI-NCO**

Report to NIAC Annual Report Year 2

June 6, 2018

Award CMMI-1612144



NCO Internal Organization



International Partnerships- Year 1

NHERI and NIED/EDefense



Elements:

- Access to Facilities
 - Testing Techniques
 - Condition Assessment
 - Post-disaster data collection
- Research Coordination Program
- Data Exchanges
- Educational and Outreach Activities



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.

International Partnerships- Year 1



NATIONAL CENTER FOR RESEARCH ON EARTHQUAKE ENGINEERING (NCREE)

The National Center for Research on Earthquake Engineering (NCREE) was officially established in 1990 through a joint effort of the [Ministry of Science and Technology \(MOST\)](#) and the [National Taiwan University \(NTU\)](#).

NCREE became a non-profit organization under the supervision of the [National Applied Research Laboratories \(NARLabs\)](#) in 2003. NCREE currently operates two Laboratories (Tapei and Tainan) and is able to conduct long-stroke high-velocity shaking table tests and cyclic quasi-static tests under extreme high axial loads.



NCREE completed construction on a high-speed long-stroke shaking table system in Tainan in August 2017.

Letter of Agreement

NCREE and NHERI signed a letter of agreement in August 2017 during a tour by NHERI representatives of the NCREE Tainan facility.

[NHERI-NCREE Letter of Agreement 9-17.pdf](#)



International Partnerships- Year 2



- The Foundation EUCENTRE, European Centre for Training and Research in Earthquake Engineering
- HR Wallingford Research Laboratory on Tsunami and Storm Surge Research



NHERI Community – ECO Committee

Plan & drive activities to engage and expand the NHERI community.

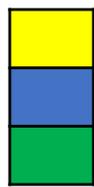
- *Research Experiences for Undergraduates*
- *Summer Institute*
- **Webinars**
- **Other designsafe-ci.org Learning Center resources**



ECO Programs - REU

Research Experiences for Undergraduates

June							July							August						
SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA
	28	29	30	31	1	2											1	2	3	4
3	4	5	6	7	8	9	1	2	3	4	5	6	7	5	6	7	8	9	10	11
10	11	12	13	14	15	16	8	9	10	11	12	13	14	12	13	14	15	16	17	18
17	18	19	20	21	22	23	15	16	17	18	19	20	21	19	20	21	22	23	24	25
24	25	26	27	28	29	30	22	23	24	25	26	27	28	26	27	28	29	30	31	
							29	30	31											



FIU, Lehigh, UC Berkeley, U Florida, UT Austin
 OSU, UC Davis, UCSD, UT Austin, UW
 Overlapping period where all sites are active



All REU Students meet at OSU for presentations



ECO Programs

REU Deliverables

1. research paper for publication and presentation
2. increased interest in research and graduate education



DESIGNSAFE-CI NHERI: A NATURAL HAZARDS ENGINEERING RESEARCH INFRASTRUCTURE

Log In Register

Research Workbench -- Learning Center -- NHERI Facilities -- NHERI Community -- About Help -- Search/Navigation

REU 2017 STUDENT PROJECTS

The 2017 Research Experience for Undergraduates (REU) program featured seventeen students assigned to sixteen projects throughout the network of NHERI facilities.

At the conclusion of the ten-week summer program, students produced a research poster and paper for their project and gave a presentation on their experience. The posters and papers can be found below, and a copy of the presentation slides as well as a video recording of the presentations can be found at the "REU 2017" project within the DesignSafe Data Depot.

Ammar Musa and Olajide Ogunmola

Home university: University of Texas, San Antonio
NHERI EP Site: University of Texas – Texas Advanced Computing Center
Faculty mentors: Chadis Day and Merit Esteve
Graduate student mentors: Yuxiang Lin and Carl Bernier
Research project title: Creation of a tool for raw data comprehension
Research Paper: [Paper-Ammar & Ogunmola.docx](#)

Jared Walbert

Home university: Humboldt State University
NHERI EP Site: University of Texas at Austin
Faculty mentors: Dr. Patricia Clayton & Dr. Fanyuh Meng
Graduate student mentor: Benchan Zhang
Research project title: Estimation of liquefaction at a regional level using geologic maps
Research paper: [Paper-Jared Walbert.docx](#)

Dr. T. Nguyen



Summer Institute – desired outcomes

1. Build Community – focus on early career faculty
2. Develop key portions of a grant proposal draft
 - Gain strategies and knowledge from NSF
 - Learn details of experimental facilities and site resources & training from sites
 - Experience educational outreach opportunities & guidance linked to proposal development
3. Participate in annual review of NHERI Science Plan
4. Gain interdisciplinary collaboration



Purdue University (NCO)



Structure of the Outreach

Type of message	Communication vehicle	Audience	Frequency
<p>Community action items</p> <p>Examples: EF training announcements and registration; surveys; payload opportunities</p>	<ul style="list-style-type: none"> DesignSafe “Announce” email DesignSafe Education and Training page DesignSafe Community events page 	NHERI community, DesignSafe users, general public	Daily, weekly
<p>Community news</p> <p>Examples: upcoming experiments, new grant award announcements, facility news and events, team changes, outreach events, REU student activities, faculty honors</p>	<p>News features</p> <ul style="list-style-type: none"> DesignSafe Home page DesignSafe Newsroom Monthly Recap newsletter (Announce list) NHERI social media 	NHERI users, general public, Social media followers	Daily, weekly
<p>Research, education</p> <p>Examples: research findings, research reports, reconnaissance reports</p>	<p>Quarterly newsletters</p> <ul style="list-style-type: none"> DesignSafe “Announce” email DesignSafe Quarterly archive NHERI social media <p>DesignSafe Podcast</p> <ul style="list-style-type: none"> Podcast outlets DesignSafe Newsroom <p>Natural Hazards Engineering Newsletter</p>	<p>NHERI users, NSF administrators, social media followers</p> <p>General public, natural hazards researchers, enthusiasts</p> <p>Natural hazards researchers, enthusiasts</p>	<p>Quarterly</p> <p>Weekly</p> <p>Weekly</p>
<p>National-level news</p> <p>Examples: Research findings, national honors. Often initiated by the EF’s home university</p>	<p>News releases</p> <ul style="list-style-type: none"> DesignSafe Newsroom DesignSafe News release archive NHERI social media 	External hazards researchers, students, administrators, news media	As warranted



SOCIAL MEDIA ACTIVITY

Top media Tweet earned 1,106 impressions

Natural hazards engineers: Payload possibilities for @UCSDJacobs shake table test, "Simulation of Shear-Dominated Reinforced Masonry Wall Systems." Tests begin in April. Details: ow.ly/Uqmx30hUGlx #earthquake #engineering @NSF_ENG pic.twitter.com/SQ4POqVDnS



13:3 2

View Tweet activity

View all Tweet activity

232 followers
 ~164 impressions per day
 66 Tweets by NHERI

Top Facebook Post

Natural Hazards Engineering Research Infrastructure
Published by Cole Al Utta · January 18 · 9h

"If structural engineers have their way, building codes will take a leap forward in the next couple of years to allow the use of higher-strength 80-ksi reinforcing steel in concrete shear walls in high seismic zones. The codes currently only allow 80-ksi rebar for nonseismic applications." From the Engineering News-Record, #earthquake #resilience



Tests of Concrete Walls with High-Strength Rebar Lay Foundation for Code Change

If structural engineers have their way, building codes will take a historic leap forward in the next five years to allow higher-strength 80-ksi reinforcing...

ENR.COM

Performance for Your Post

556 People Reached

24 Reactions, Comments & Shares

20 Likes	3 On Posts	17 On Walls
2 Wives	0 On Posts	2 On Walls
0 Comments	0 On Posts	0 On Walls
2 Shares	2 On Posts	0 On Walls

85 Post Clicks

0 Photo Views	30 Link Clicks	55 Text Clicks
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NEGATIVE FEEDBACK

0 Hide Post	0 Hide All Posts
0 Report as Spam	0 Unfollow Page

Relevant alerts may be filtered from a full assessment dashboard.

752 followers
 6,157 engagement
 107 posts by NHERI

Note: Engagement includes any click or story created; Unique Users, weekly



OTHER OUTREACH AVENUES

Weekly Digest for Natural Hazards News and Research

NATURAL HAZARDS ENGINEERING
NEWS AND RESEARCH
CURATED WEEKLY

For the week of May 14, 2018

10 issues
66.3% average open rate
18.5% average click rate on stories

DesignSafe Radio Podcasts



39 episodes
4,378 downloads

DesignSafe Announce List



<https://designsafe-ci.org>
> 2000 recipients



NHERI Access and Funding



- **Access through NCO Centralized Facility Scheduling of user time (NSF-Supported and non-NSF-supported) at each Experimental Facility, including the RAPID.**
- **Funding:**
 - **NSF CMMI and other directorates**
 - **Other Federal and State Agencies and Industry**
 - **Industry**



*Research Team
at OSU Facility –
Dan Cox, OSU PI*



PROJECTS IN NHERI



Facility	NSF Funded Projects (Utilization Days)	Other Federal/State Agencies or Industry in NHERI Time	Projects in Non-NHERI Time
Oregon State University	9 (311)	2	1
UC Davis	8 (287)		1
UC San Diego	4 (230)		1
Lehigh University	12 (398)		
Florida International University	12 (262)		5
University of Florida	12 (269)	1	
UT Austin	5 (252)		
Total	55	3	8

***Tracked by NCO since 2/1//2017 and up to 4/17/18**



Technology Transfer Committee

- **Purpose:**

- ✓ The primary task will be to review the results of NHERI research projects to identify findings that could immediately lead to improvements in the design, construction, and/or assessment process that will result in mitigation of risk due to natural hazards. Other tasks that will result in stronger ties between NHERI researchers and the user community will be identified by the committee.



ORGANIZATION: Interest Groups

Member	email	Specialty			
		Earthquake	Wind	Tsunami/Surge	Geotechnical
Don Anderson					
David Bonowitz	dbonowitz@att.net	David Bonowitz	David Bonowitz		
Gary Chock	gchock@martinchock.com			Gary Chock	
Joe Cibor	jcibor@ciborinc.com			Joe Cibor	Joe Cibor ³
Kelly Cobeen	kcobeen@wje.com	Kelly Cobeen	Kelly Cobeen		
Anne Cope	acope@ibhs.org		Anne Cope		
Bill Coulbourne	bill@coulbourneconsulting.com		Bill Coulbourne ³		
Jim French	jim.french@woodplc.com	Jim French			Jim French
Jim Harris	jim.harris@jrharrisandco.com		Jim Harris		Jim Harris
Bill Holmes ¹	wholmes@ruthchek.com	Bill Holmes			
Chris Jones					
Phil Line	pline@awc.org	Phil Line	Phil Line	Phil Line	
Jim Malley ²	malley@degenkolb.com	Jim Malley			
Bonnie Manley	bmanley@steel.org	Bonnie Manley	Bonnie Manley		
Danielle Mieler	daniellemieler@gmail.com	Danielle Mieler		Danielle Mieler ³	
Jack Moehle	moehle@berkeley.edu	Jack Moehle			
Bob Pekelnicky	rpekelnicky@degenkolb.com	Bob Pekelnicky			
Chris Rojahn	crojahn@atcouncil.org	Chris Rojahn ³			
Mike Valley	mvalley@mka.com	Mike Valley			Mike Valley
	1. Committee Chair	Note: Chair plus 4 group leaders make up the Executive Committee			
	2. User Forum Rep				
	3. Group Leader				



POLICIES AND PROCEDURES

- Need to establish credibility with
 - Implementers—so that they will take our suggestions
 - Researchers—so that they will cooperate with us.



POLICIES AND PROCEDURES

- Passive Actions (Started)
 - At a minimum, develop brief summary of promising research project that could be sent to appropriate implementation group.
 - The intent is not to develop specific changes to codes and standards, but to place information before appropriate committees.
- More Aggressive Actions (None taken)
 - Offer advice to researchers to make results more implementable (Actively? By request?)
 - Identify associated research issues that need to be resolved for implementation



Action Items

Create initial review forms for each award (50% completed)



Initial Review Form

NEHRP Technical Transfer Committee

**Initial Review
of NSF Research Award Descriptions
to Estimate When Implementation of Results may be Possible.**

Date _____

Approximate Completion percentage _____

NSF Award No. _____

Title _____

PIs _____

NHERI Site(s) _____

Summary

How results could be used

Estimated Time to Implementation: Upon Completion _____ 5 years _____ 10 years or greater _____



Action Items

Create initial review forms for each award

Monitor promising projects

- Websites
- Reports
- Papers
- Direct Contact?

Distribute info on promising projects to whole committee to solicit suggestions/volunteers for implementation.



Natural Hazards Engineering Research Infrastructure (NHERI)

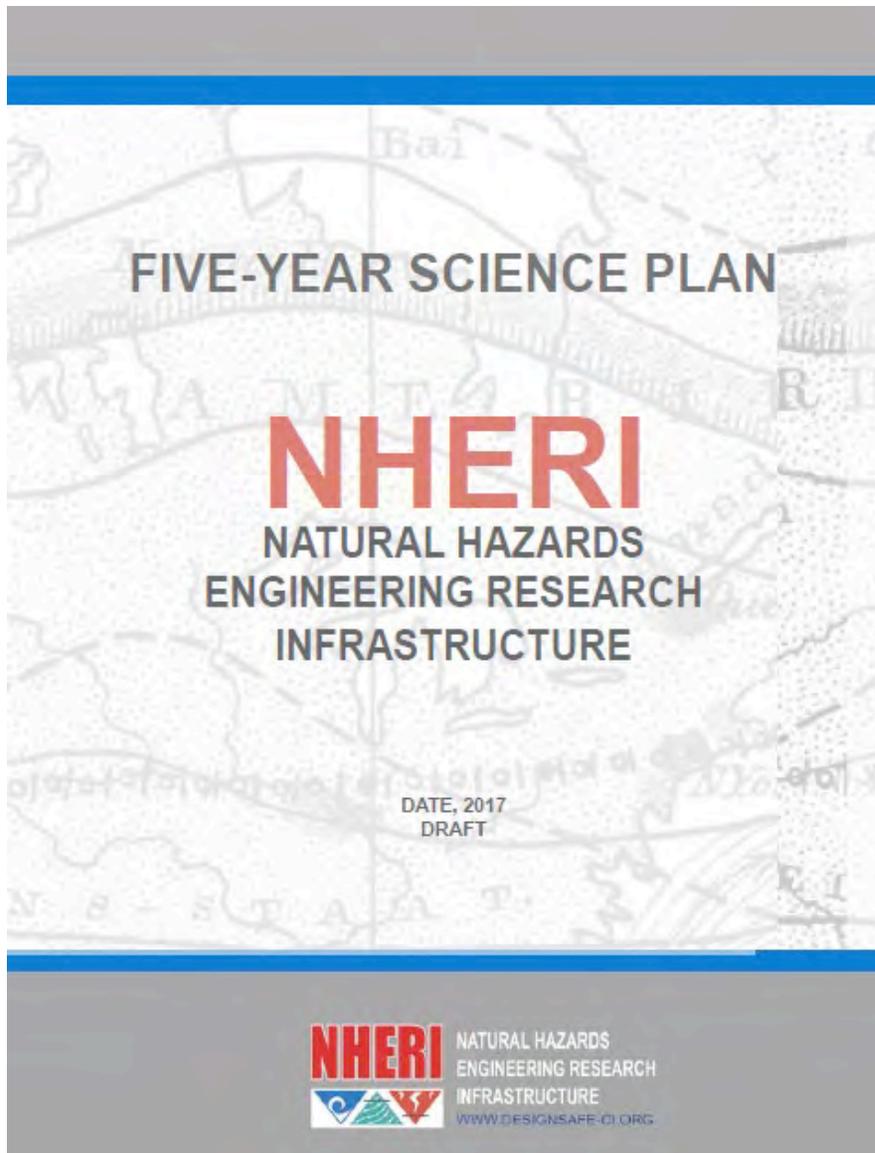
NHERI-Network Coordination Office **NHERI-NCO**

NHERI Five-Year Science Plan

Summer Institute (CMMI-1612144)
June 4, 2018



NHERI Science Plan



Developed with broad community and NHERI awardees input:

- Academia
- Early Career Professional
- Lifeline Infrastructure
- NHERI Investigators
- Practitioners
- Social Scientists



Development Process



- Council and NCO Draft Review
- Updated Draft and Issued for Community Input
- Responded to Review Comments, Posted First Edition on July 14, 2017



Earthquake damage, Chile



Further Development



- Seek Input at Summer Institute, 2017 and 2018
- Seek Input from Users and Community, **June – July 8, 2018**
- Respond to Review Comments, Post Second Edition
- Seek Input at NHERI International Workshop in 2018/2019
(including emerging and disruptive technologies)

Advanced computational methods and high performance computing

Data-driven science

Robotics

Bio-inspired design

Additive manufacturing

Advanced materials

