

NHERI Council Monthly Meeting No. 2, Y-7
August 4, 2022 02:00 – 3:00 PM EDT

NHERI Council – Summer 2022 Meetings

Title: NHERI Council - Summer 2022

Location: <https://DesignSafe-ci.zoom.us/j/99962175836>

When: Occurs the first Thursday of every month effective 6/2/22, 7/7/22 and 8/4/22 from 2:00 PM to 3:00 PM.

Description: Join Zoom Meeting
<https://DesignSafe-ci.zoom.us/j/99962175836>

Meeting ID: 999 6217 5836

Attending:

- Oregon State University: Dan Cox (EF Dir.) Hinsdale
- University of California, Berkeley: Sanjay Govindjee (Co-Dir.) SimCenter
- University of California, Davis: Ross Boulanger (EF Dir) CGM
- University of California, San Diego: Joel Conte (EF Dir.,) LHPOST
- University of Colorado Boulder: Lori Peek (Dir., CONVERGE)
- University of Florida: Jennifer Bridge (EF Dir. and Council Chair) Powell Lab
- University of Texas at Austin: Ellen Rathje (CI Dir.) DesignSafe-CI
- University of Texas at Austin: Ken Stokoe (EF Dir.) Texas Mobile Equipment Facility
- University of Washington: Joe Wartman (EF Dir. and Council Vice-Chair) RAPID
- National Science Foundation: Joy Pauschke (Prog. Dir, NHERI)
- Purdue University: Julio Ramirez (NCO Dir., Council Secretary), and Robin Nelson (NCO ECO)
- Florida International University: Arindam Chowdhury (EF Dir.) WOW
- Lehigh University: Jim Ricles (EF Dir.) ATLSS

Minutes

1. Attendance

On the first page

2. Review and Approval of Minutes (previously distributed) Meeting No. 1, 7/07/22 in Y-7 (Jennifer)
Minutes were approved as distributed. Ross moved and Sanjay seconded, passed without objection.

Approved Minutes posted at: <https://www.designsafe-ci.org/facilities/nco/governance/nheri-council/>

3. Continuing Business

- a) Update NHERI Researchers Meeting. (Jennifer Bridge, Dan Cox and Julio Ramirez, 20')
Almost 100 applications for travel awards were received. 43 travel award notices have been sent to mostly assistant professors, a few graduate students and post-doctoral researchers. In addition, 7 members of the Graduate Student Council of NHERI have also received travel awards. The program for both days is coming together well. Julio noted that several representatives from the bilateral international collaborations that NHERI has will be coming to the Summit and mentioned plans for a dinner with them on the evening of Oct 5. Council members and Joy were invited to join.

Joy noted about the calendar invite or "add to calendar" option that she got when she registered that it did not specify the location and it would be nice to add it. The committee will follow up on this item.

Action item 1: Please let Julio know if you plan to join the dinner.

b) NCO Items (15')

- i. 2022 REU program and Summer Institute Update. (Robin Nelson, 10')
Robin Nelson from the NCO ECO team presented the update on both activities (slides attached). As mentioned during the meeting, the NHERI NCO ECO invites you to join virtually or in person at the NHERI REU Research Symposium and hear about the exciting research these natural hazards research have been working on over their ten-week research experience. Please see the ECO REU attachments for the Zoom link, Physical address, and REU names and research titles. If you have any questions, please contact Robin (robin.nelson@utsa.edu). As in previous editions, the posters, presentations, and papers will be uploaded to Data Depot and will be accessible from the NHERI DesignSafe REU page in September (<https://www.designsafe-ci.org/learning-center/reu/>) for your perusal.

Action Item: try to join the Symposium on August 8th!

- ii. Fall schedule of Council Meetings all from 2:00 PM to 3:00 PM Eastern: September 1st, October 13th, November 10th, and December 1st. (Julio, 5')
Council agreed to the date/time for Council meetings above. NCO will send details of the zoom meeting with calendar invites.

c) Facility status updates (All)

- NCO: see item b)

- CONVERGE:

CONVERGE now has 10 Training Modules available with an 11th to be released early this fall. A humanitarian practitioner working in several African nations recently reached out offering to translate the modules to FRENCH as they use them for their trainings! <https://converge.colorado.edu/resources/training-modules/>

Following the CONVERGE Virtual Forum on the Marshall Fires, a group of nearly 40 researchers came together to develop the Marshall Fire Unified Survey Instrument. This instrument involves social scientists and engineers and was designed with an eye toward reducing respondent burden on affected communities (rather than distributing 15 surveys, they distributed one). That survey is now in progress to be published on DesignSafe!

CONVERGE Virtual Forums: <https://converge.colorado.edu/category/virtual-forums/>

Marshall Unified Survey: <https://www.marshallresilience.com/survey>

The Natural Hazards Center and CONVERGE have pioneered an approach of incentivizing (paying!) social science researchers to publish their data and/or research instruments on DesignSafe. With the support of NOAA, the NHC and CONVERGE have put out two special calls to support Data and Instrument publication. More on the calls and the \$ amount of the incentives here:

<https://hazards.colorado.edu/research/weather-ready-research/index>

Lori Peek was invited by the editors at *American Scientist* to write an article. Her piece, A New System for Disaster Research, highlights the activities of the NHERI CONVERGE facility and of the NSF-supported Extreme Events Research and Reconnaissance networks. More here:

<https://www.americanscientist.org/article/a-new-system-for-disaster-research>

- RAPID: JULY 26-29, 2022 NHERI RAPID Facility Intensive Training Workshop was a great success.
- SimCenter: JULY 18-22 NHERI SimCenter 2022 Programming Bootcamp completed. The SimCenter Symposium 2022, TACC, UT Austin, November 4, 2022 - Abstracts Due August 31.
- Lehigh: great REU activity and continuing to support researchers.
- UCSD: Construction of the ten-story timber building is ongoing, and San Diego Industry-Academia Workshop is coming on Oct. 13-14, 2022.
- DesignSafe: continue to promote data reuse and archival in the NHERI repository, and a successful DesignSafe Academy and NHERI Hackathon at the end of July.
- U. of Florida: engaged with the SimCenter in the development of a digital twin for the wind tunnel and providing support to the REU program.

4. New Business

No new business came before the Council.

5. Adjourn

Meeting adjourned at 3:03 PM EDT, Lori moved and Julio seconded the motion. Next meeting is on Sept 1 at 2:00 PM EDT.



NHERI Council Educational Community Outreach (ECO) Update

August 4, 2022



Summer Institute



Participants

- Early-career (17)
- NHERI GSC (5)
- Educators (4)

NHERI Reps.

- NCO (8) & TTC (4)
- User Forum (6)
- Sites (11)



Summer Institute Experience



Most Memorable Sessions

Broader Impacts

Diversity, Equity, & Inclusion

NSF Grant Writing Proposal

NHERI Site Presentations

TTC

Collaborative Proposal Writing Groups

Career Award

One-to-One Sessions with Site Representatives

Science Plan

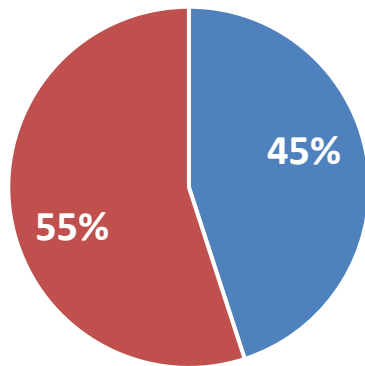
NHERI Researcher Panel



Summer Institute: Broadening Participation

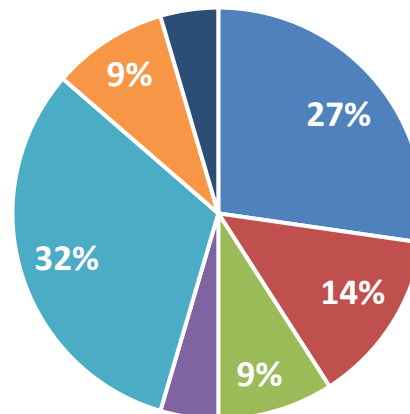
First-Generation Status
(N=22)

- Not First-Gen (13)
- First-Generation (9)



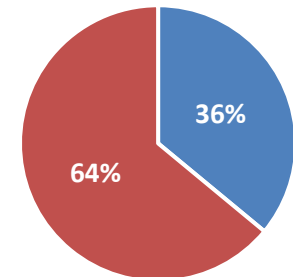
Race/Ethnicity (N=22)

- Asian or Asian American (6)
- Black or African American (3)
- Hispanic or Latinx (2)
- Native Hawaiian or Pacific Islander (1)
- White or Caucasian (8)
- Multiracial (2)
- None of the above/ Do not wish to answer (1)



Gender (N=22)

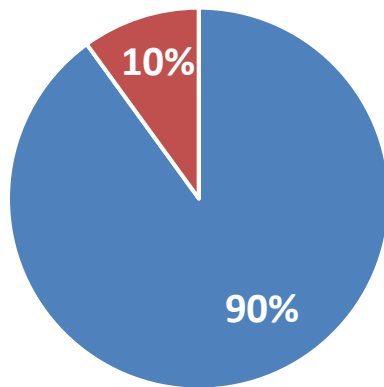
- Male (8)
- Female (14)



General Overview

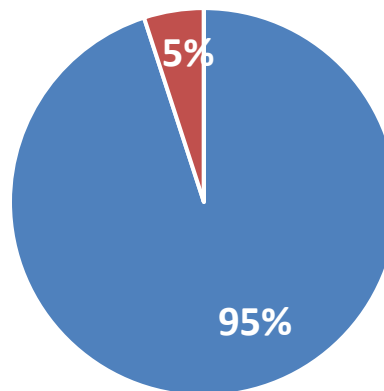
Exposure to Working With Natural Hazards Community (N=22)

- A great deal (20)
- A lot (2)
- A moderate amount (0)
- A little (0)
- None at all (0)



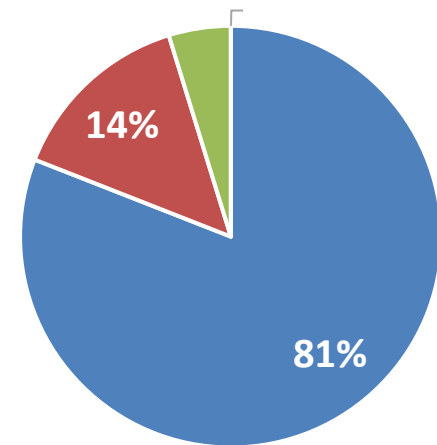
How Much More Did You Learn About NHERI, Research, & Resources? (N=22)

- A great deal (21)
- A lot (1)
- A moderate amount (0)
- A little (0)
- None at all (0)



How Much Do You Plan to Work with NHERI? (N=22)

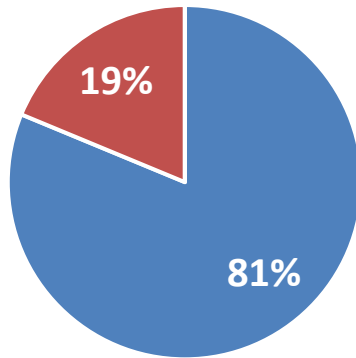
- A great deal (17)
- A lot (3)
- A moderate amount (1)
- A little (0)
- None at all (0)



Grant Proposals

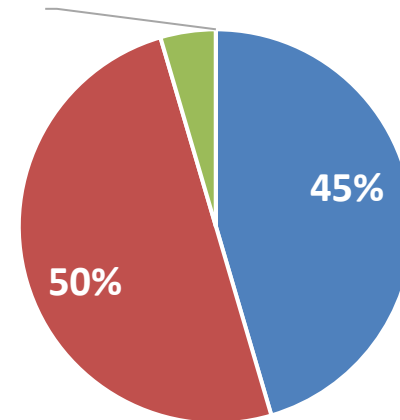
NSF Presentation Contributed to My Knowledge of Grant Writing Proposals (N=22)

- Strongly agree (13)
- Somewhat agree (3)
- Neither agree nor disagree (0)
- Somewhat disagree (0)
- Somewhat Disagree (0)



How Prepared Do You Feel to Write a Grant Proposal? (N=22)

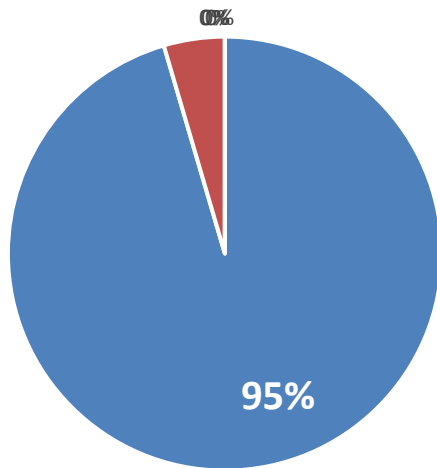
- Extremely Prepared (10)
- Moderately Prepared (11)
- Slightly Prepared (1)
- Neither Prepared nor unprepared (0)
- Slightly Prepared (0)



Science Plan & TTC

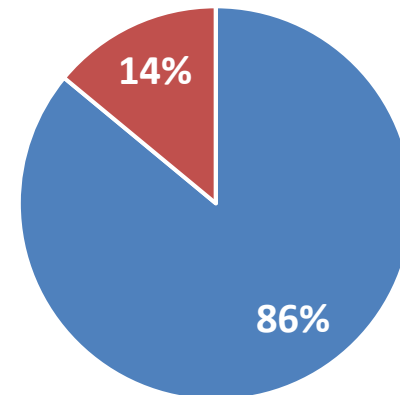
Familiar with NHERI Science Plan (N=22)

- Strongly agree (21)
- Somewhat agree (1)
- Neither agree nor disagree (0)
- Somewhat disagree (0)
- Somewhat Disagree (0)



Plan to Move Research into Practice in Future Proposals

- Strongly agree (19)
- Somewhat agree (3)
- Neither agree nor disagree (0)
- Somewhat disagree (0)
- Somewhat disagree (0)



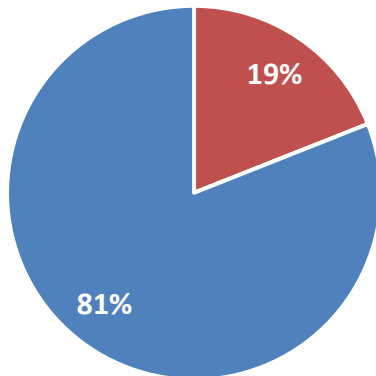
REU Experience



REU: Broadening Participation

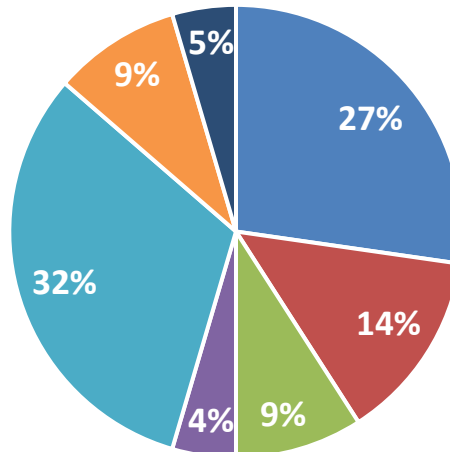
First-Generation Status
(N=31)

- First-Gen (6)
- Not First-Gen (25)



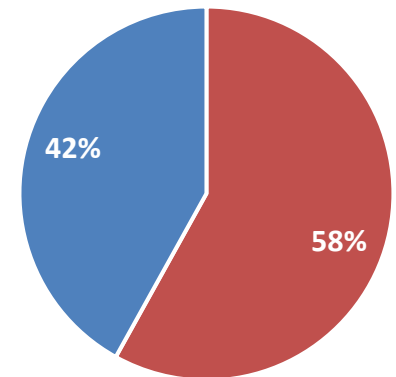
Race/Ethnicity (N=22)

- Asian or Asian American (6)
- Black or African American (3)
- Hispanic or Latinx (2)
- Native Hawaiian or Pacific Islander (1)
- White or Caucasian (8)
- Multiracial (2)
- None of the above/ Do not wish to answer (1)



Gender (N=31)

- Female (19)
- Male (13)



NHERI REU Research Symposium

You are invited to join us to hear about the exciting research the NHERI REU Interns have completed this summer.

- August 8-9, 2022
- In-person poster sessions
- Hybrid presentations



NHERI Research Experiences for Undergraduates Research Symposium

The University of Texas at Austin
Texas Advanced Computing Center
10100 Burnet Road
Austin, TX 78758

Monday, August 8, 2022
(Central Times)

Join from PC, Mac, Linux, iOS or Android: <https://utsa.zoom.us/j/9013659006>

Breakfast, Welcome & Registration		
7:30-8:15am	Breakfast	Commons Café
8:30-9:00am	Mobile Shakers in Parking Lot of TACC	TACC
REU Research Presentations		
9:15-9:30am	Destiny Meyers <i>Incorporating Wind-Induced Dynamic Effects to Estimate Peak Wind Loads on Roof-Mounted PV systems</i> NHERI Wall of Wind at Florida International University Columbia University	
9:30-9:45am	Alejandra Reyes <i>Damage Observations and Experimental Investigation of Wind Loads on Coastal Houses</i> NHERI Florida International University University of Southern California	
9:45-10:00am	Bennard Amoooteh <i>Visualization of a Separated Flow on a Canopy Attached to a Mid-rise Building</i> NHERI Wall of Wind at Florida International University Rensselaer Polytechnic Institute	
10:00-10:15am	Lindsay Trask <i>Prediction of Peak Pressure Coefficients Using Higher Order Statistics with Machine Learning</i> NHERI Boundary Layer Wind Tunnel at the University of Florida Rensselaer Polytechnic Institute	
10:15-10:30am	Daleen Torres Burgos <i>Higher-Order Turbulence and its Effects on Structural Loads and Response: A Study on Experimental Equivalence</i> NHERI Boundary Layer Wind Tunnel at the University of Florida University of Puerto Rico Mayaguez	
10:30-10:45am	Borakan Haller <i>Project Sentinel</i> NHERI Boundary Layer Wind Tunnel at the University of Florida	

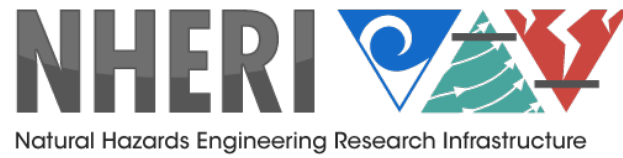


Zoom: <https://utsa.zoom.us/j/9013659006>

In-Person: Texas Advance Computer Center ACB 1.104



THE NHERI NETWORK IS SUPPORTED BY MULTIPLE GRANTS FROM THE NATIONAL SCIENCE FOUNDATION.



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	Purdue University	
10:45-11:00am	Break	
11:00-11:15am	Daniel Coble <i>Deep Learning-based Friction Modeling of Dry Interfaces for Structural Dampers</i> NHERI Real-Time Multi-Directional Hybrid Simulation Experimental Facility at Lehigh University University of South Carolina	
11:15-11:30am	Eiry Román Cardona <i>Characterization Test of Pressurized Sand Damper Using the Bouc-Wen Model</i> NHERI Real-Time Multi-Directional Hybrid Simulation Experimental Facility at Lehigh University University of Puerto Rico Mayagüez	
11:30-11:45am	Josué Dieppa Ortiz <i>Assessment of Pressurized Sand Dampers Impact in a Structural System Using Hybrid Simulations</i> NHERI Real-Time Multi-Directional Hybrid Simulation Experimental Facility at Lehigh University University of Puerto Rico Mayagüez	
11:45am - 12:00pm	Demetra Jamie Karras <i>3D Model of a Concentrically Braced Frame for Real-Time Hybrid Simulation</i> Lehigh University Wake Forest University	
Networking Lunch		
12:00-1:00pm	Networking Lunch	Commons Café
TBA		
1:00-2:00pm	TBA	
Research Poster Presentations		
2:00-3:00pm	Research Poster Presentations from SimCenter, Center for Geotechnical Modeling, Large High Performance Outdoor Shake Table, O.H. Hinsdale Wave Research Laboratory, and RAPID interns.	TACC
REU Student Presentations		
3:00-3:15pm	Tobe Onyekwelu <i>Noninvasive Subsurface Modeling with Python Programming</i> NHERI Large Mobile Shakers at the University of Texas at Austin Howard University	
3:15-3:30pm	Sabrina Talghader <i>Noninvasive Subsurface Imaging of Sinkholes Using HVSR Measurements</i> NHERI Large Mobile Shakers at the University of Texas at Austin Rice University	
3:30-3:45pm	Daynen Clouse <i>Using Paraview for Non-Invasive Subsurface Modeling of Anomalies in Newberry, Florida</i>	



Natural Hazards Engineering Research Infrastructure

	NHERI Large Mobile Shakers at the University of Texas at Austin Montana State University	
3:45-4:00 pm	Break	
4:00-4:15pm	Greg Gabriel <i>Deriving Soil Constitutive Model Using AI on Undrained Soil Conditions</i> NHERI DesignSafe at the University of Texas at Austin University of the Pacific	
4:15-4:30pm	Dela Houssou <i>Deriving Soil Constitutive Model Using AI on Drained Soil Conditions</i> NHERI DesignSafe at the University of Texas at Austin	
4:30-4:45pm	Joni McCawley <i>Implementing Physics Constraints into Graph Network-based Simulator for Natural Hazard Predictions</i> NHERI DesignSafe at the University of Texas at Austin Texas State University	
Day's Closing		
4:45-5:00pm	REU Day 1 Announcements	TACC



NHERI Research Experiences for Undergraduates Research Symposium

The University of Texas at Austin
Texas Advanced Computing Center, Room ROC 1.900
10100 Burnet Road
Austin, TX 78758

Tuesday, August 9, 2022

Join from PC, Mac, Linux, iOS or Android: <https://utsa.zoom.us/j/9013659006>

Networking Breakfast		
8:15-9:00am	Networking Breakfast	Commons Café
REU Student Presentations		
9:15-9:30am	<p>Carmen Andrade <i>Comparative Study of Surrogate Model Methods for Predicting Seismic Structural Response</i> NHERI SimCenter at the University of California, Berkeley Carnegie Mellon University</p>	
9:30-9:45am	<p>Emily Ping <i>Comparison of material model calibration methods using response predictions from component model</i> NHERI SimCenter at the University of California, Berkeley Rensselaer Polytechnic Institute</p>	
9:45-10:00am	<p>Mitchell Given <i>Evaluation of Brooklyn Storm Shelter Capabilities to Meet the Needs of Vulnerable Populations</i> NHERI SimCenter at the University of California, Berkeley University of Albany</p>	
10:00-10:15am	Break	
10:15-10:30am	<p>Yahya Bille <i>Soil Compaction for Centrifuge Model Construction</i> NHERI Center for Geotechnical Modeling at the University of California, Davis Portland State University</p>	
10:30-10:45am	<p>Masen Maggio <i>Concentrated Leak Erosion Induced by Differential Settlement</i> NHERI Center for Geotechnical Modeling at the University of California, Davis Rensselaer Polytechnic Institute</p>	
10:45-11:00am	<p>Anna Bachanik <i>Image Analysis of Settlement-Induced Cracking in Centrifuge Models</i> NHERI Center for Geotechnical Modeling at the University of California, Davis California State University Sacramento</p>	
11:00-11:15am	<p>Megan Butcher <i>Construction of NHERI TallWood Test Building: From Tree to Tower</i> NHERI Large High Performance Outdoor Shake Table at the University of California, San Diego</p>	

	Embry-Riddle Aeronautical University	
11:15am-11:30am	Abigail Brenton <i>Finite Element Modeling and Analysis of Cross-Laminated Timber (CLT) Panels for Evaluation of Stiffness Properties</i> NHERI Large High Performance Outdoor Shake Table at the University of California, San Diego University of California, San Diego	
11:30-11:45am	Sophrenia David <i>Dynamic Modeling of a 10-Story Mass Timber Building Under Earthquake Excitation</i> NHERI Large High Performance Outdoor Shake Table at the University of California, San Diego University of Massachusetts, Amherst	
Networking Lunch		
11:45am-12:45pm	Networking Lunch	Commons Cafe
Research Poster Presentations – Group 2		
1:00-2:00pm	Research Poster Presentations from the Wall of Wind, Boundary Layer Wind Tunnel, Real Time Multi-Directional Hybrid Simulation Facility, Large Scale Mobile Shakers, and DesignSafe interns.	TACC
REU Research Presentations		
2:00-2:15pm	Allison Vermaak <i>Exploration of the Utility and Accuracy of Apple iPad LiDAR Technology</i> NHERI RAPID Facility at the University of Washington Georgia Institute of Technology	
2:15-2:30pm	Nina Simrill Smith <i>Dynamic Site Characterization of Fill Sites in Seattle: Workflow, Analysis and Results</i> NHERI RAPID Facility at the University of Washington Georgia Institute of Technology	
2:30-2:45pm	Keely Patelski <i>Historic Masonry Building Reconstruction Post-Tornado Using Point Clouds</i> NHERI RAPID Facility at the University of Washington Texas Tech University	
2:45-3:00pm	Break	
3:00-3:15pm	Nick Mesa <i>Investigation of Wave-Structure Interaction during Post-Earthquake Event Using Real-Time Hybrid Simulation</i> NHERI O.H. Hinsdale Wave Research Laboratory at Oregon State University University of Florida	
3:15-3:30pm	Allison Cavallo	



	<p><i>Analysis of Wave Energy Dissipation Underneath a Floating Vegetated Canopy with Suspended Kelp via Optical Motion Capture</i> NHERI O.H. Hinsdale Wave Research Laboratory at Oregon State University Brown University</p>	
3:30-3:45pm	<p>Matthew Latham <i>Wave height and reflection analysis using the orbital velocity method for irregular waves</i> NHERI O.H. Hinsdale Wave Research Laboratory at Oregon State University Cal Poly, San Luis Obispo</p>	
Day's Closing		
4:00-5:00pm	REU Day 2 Debrief	TACC