

**NHERI Lehigh Experimental Facility  
Researcher's Workshop:  
Advanced Simulation for Natural Hazards Mitigation &  
Grand Challenges for Multi-Hazards Engineering**

***In Collaboration with NHERI University of California  
San Diego (UCSD) and NHERI SimCenter***

**NHERI Lehigh RTMD Equipment Site  
Lehigh University  
September 23-24, 2019**



# General Housekeeping Items

- Continental breakfast available in Wood Dining Room both days (*courtesy of ATLSS Engineering Research Center*)
- WDR will be used for all presentations
- H150/A121 (NHERI RTMD Experimental Facility) will be used for tours and demonstrations
- Lunch will be available in WDR both days (*courtesy of ATLSS Engineering Research Center*)
- Restrooms
- Wireless

# Objectives

- (1) To disseminate information on the use of the NHERI Lehigh EF, NHERI@UC San Diego EF, and NHERI SimCenter to conduct state-of-the-art research in natural hazards mitigation,
- (2) To understand how these facility capabilities can enhance participant research,
- (3) To provide information for preparing NSF proposals which use the NHERI Lehigh EF,
- (4) To identify and develop opportunities to utilize the NHERI Lehigh EF.
- (5) To promote collaborative team research interests to use all three facilities (NHERI Lehigh, NHERI@UC San Diego, and NHERI SimCenter), and
- (6) To brainstorm on example uses at each facility given grand challenge discussions.

# September 23 - NHERI Lehigh Researcher Workshop Draft Agenda

Advanced Simulation for Natural Hazards Mitigation & Grand Challenges for Multi-Hazards Engineering

Start Time	End Time	Room #	Description	Presenter	Title
7:30 am	8:00 am	WDR	Registration and Continental Breakfast	Lehigh EF Staff	-----
8:00 am	8:15 am	WDR	Welcome, Objectives, and Agenda Review	James Ricles	RTMD Facility PI
8:15 am	9:00 am	WDR	NHERI Lehigh: Facility Description, Capabilities, and Protocols	James Ricles	RTMD Facility PI
9:00 am	10:00 am	WDR	NHERI@UC San Diego: Description and Capabilities	Joel Conte	NHERI UCSD PI
10:00 am	10:15 am	-----	Break	-----	-----
10:15 am	11:00 am	WDR	NHERI SimCenter: Capabilities	Laura Lowes	SimCenter co-PI
11:00 am	12:45 pm	H150	NHERI Lehigh Cyber Infrastructure, Facility Tour & Real-Time Hybrid Simulation Demonstration	James Ricles / Tommy Marullo / Liang Cao / Chad Kusko	RTMD Facility Staff
12:45 pm	1:45 pm	WDR	Networking Lunch	-----	-----
1:45 pm	2:30 pm	WDR	Example Project: NHERI@UCSD	Tara Hutchinson Benson Shing	NHERI UCSD co-PI NHERI UCSD co-PI
2:30 pm	3:30 pm	WDR	Example Projects: NHERI Lehigh	James Ricles Alia Amer	RTMD Facility PI Lehigh Research Asst
3:30 pm	4:15 pm	WDR	Example Use of SimCenter/Data/Analysis Tools for Multiple Collaborative Projects	Frank McKenna Adam Zsarnoczy Wael El haddad	Chief Technology Officer, SimCenter Stanford University UC Berkeley
4:15 pm	4:30 pm	WDR	Break	-----	-----
4:30 pm	5:00 pm	WDR	Proposal Preparation and Post-Award Expectations	Chad Kusko Liang Cao	RTMD Ops Mgr RTMD Research Sc.
5:00 pm	5:15 pm	WDR	NHERI DesignSafe: User Tools and Support	Gilberto Mosqueda	NHERI UCSD co-PI
5:15 pm	5:30 pm	WDR	Questions and Answers & Wrap-Up	All	-----

# September 24 - NHERI Lehigh Researcher Workshop Draft Agenda

## Advanced Simulation for Natural Hazards Mitigation & Grand Challenges for Multi-Hazards Engineering

Start Time	End Time	Room #	Description	Presenter	Title
7:30 am	8:00 am	WDR	Registration and Continental Breakfast	Lehigh EF Staff	----
8:00 am	8:15 am	WDR	Opening Remarks	James Ricles	RTMD Facility PI
8:15 am	9:15 am	WDR	Grand Challenge 1: Resilience of East Coast Infrastructure <i>List of open issues and scope of problem</i> <i>Example use of facilities (including NHERI Lehigh) to address key scientific needs</i>	Larry Fahnestock	Professor, University of Illinois at Urbana-Champaign
9:15 am	10:15 am	WDR	Grand Challenge 2: Seismic Structural Components <i>List of open issues and scope of problem</i> <i>Example use of facilities (including NHERI Lehigh) to address key scientific needs</i>	Robert Fleischman	Professor, University of Arizona
10:15 am	10:30 am	----	Break	----	----
10:30 am	11:30 am	WDR	Grand Challenge 3: Protective systems <i>List of open issues and scope of problem</i> <i>Example use of facilities (including NHERI Lehigh) to address key scientific needs</i>	Richard Sause	Professor, Lehigh University
11:30 am	12:00 pm	WDR	Grand Challenge Discussion	All/Moderator	----
12:00 pm	12:30 pm	WDR	Questions, Closing Remarks, and Evaluations	Lehigh EF Staff	----
12:30 pm	1:15 pm	WDR	Networking Lunch	----	----

# NHERI Lehigh EF Team



James Ricles, PI



Richard Sause, Co-PI



Chad Kusko  
Operations Mgr



Thomas Marullo  
IT Systems Mgr



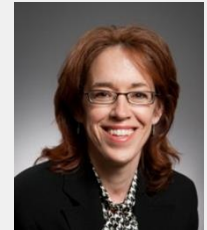
Liang Cao  
Research Engr



Darrick Fritchman  
ATLSS Lab Mgr



Peter Bryan  
ATLSS IT Support



Doris Oravec  
ATLSS Finance Mgr

## Capacity Building Partners



Shamim Pakzad  
Adv. Sensors, Structural Monitoring  
Lehigh Univ

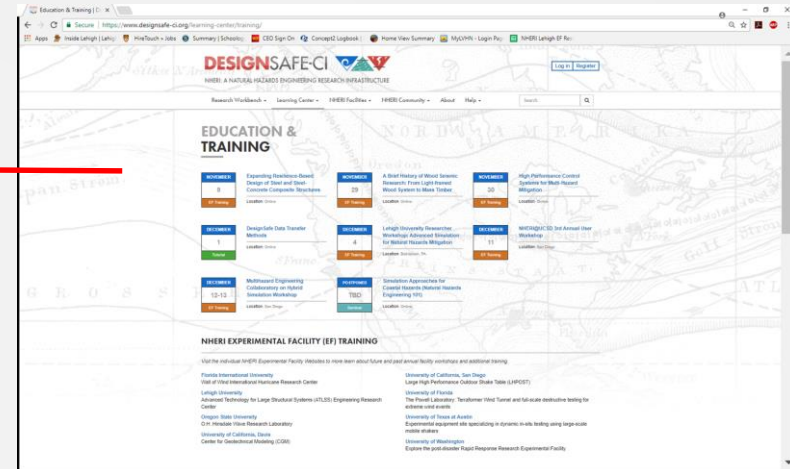
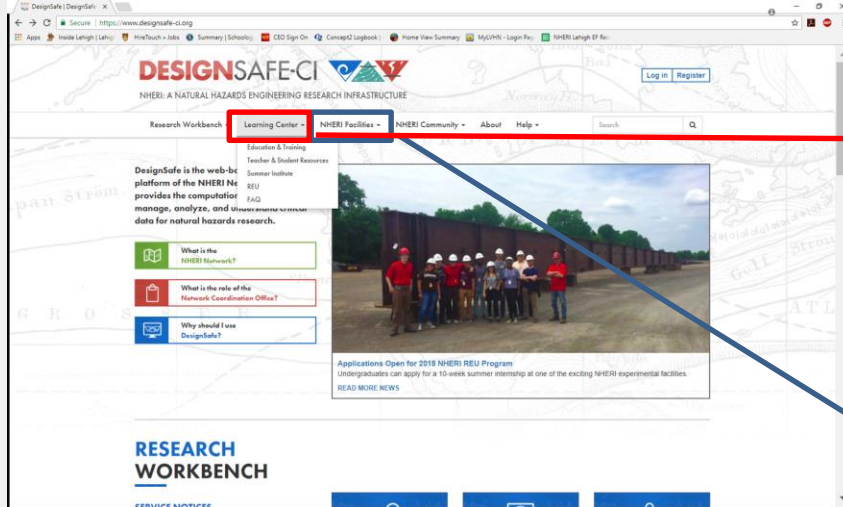


Muhannad Suleiman  
Soil-Structure Interaction  
Lehigh Univ



# Introduction to Website

- NHERI Website: <https://www.designsafe-ci.org/>
  - Facility information and facility ECO activities



- NHERI Lehigh website:
  - <https://lehigh.designsafe-ci.org/>

