



Topic:	Lessons Learned: Application to NHERI Experimental Facilities
Speaker(s) Name and Title:	Dan Zehner - Facilitator
Scribe Name:	
Session Description:	Panel Discussion on the lessons learned program developed for the Natural Hazards Engineering Research Infrastructure (NHERI) and summarized outcomes from three NHERI facilities.
Session Time Slot:	Wednesday May 2, 2018 at 8 am
Purpose and Desired Outcome:	Sharing of outcomes from NHERI's after action reviews and demonstrate the benefits of an inter-facility lessons learned program

Notes & Key Points	<i>Capture best practices, actionable recommendations, and decisions.</i>
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Disclaimer: *These are raw notes that were captured by the assigned scribe during this session at the 2018 Large Facilities Workshop. This is one individual's interpretation of what took place during the session, and its content does not necessarily represent the viewpoint of the National Science Foundation.*

Notes:

Dan Zehner – Network Coordination Office (NCO)

- NHERI is developing processes to share lessons learned and build a learning culture among the different NHERI sites.
- NCO is facilitating the sharing between Facilities which in turn increases the resilience of the Facilities. NCO also does coordination with international facilities and collaborations.
- NCO executes central scheduling for the NHERI sites. A couple Lessons Learned:
 - Simpler is better!
 - Communication with the users with consistent engagement.

Darren McKay – UCSD Large High-Performance Shake Table Facility

- 30 major tests have been performed in 12 years of operation.
- The Facility recently added a Staging Area to have multiple projects on-going simultaneously because there is a lot of effort associated with preparation of the experiment prior to the actual test. The Staging Area increases the productivity of the Facility.
- Lessons Learned identified after an after-action review:
 - Need to ensure adequate monitoring of non-critical path activities along with critical path activities.
 - Involve the technicians in review of the drawings (constructability) during the planning phase.
 - Ensure all stakeholders have a voice during the various phases of a project.

Maryam Refan – FIU Wall of Wind (WOW) Facility

- Facility can simulate up to Category 5 hurricane winds and wind-driven rain to study water intrusion. Multi-scale and destructive testing on various structures can be performed.
- There are three phases to each project – Planning, Execution, and Closeout. Project Planning is the most challenging and time-consuming.

- For a specific project, a pre-test on a load cell identified that multiple assumptions were not accurate. If this pre-test had not been done, there would have been impacts to schedule and costs (pre-test was on a less expensive model). Based on this experience, verification of assumptions with pre-tests is desired especially when there are a lot or significant assumptions.
- Understanding vendor capabilities during the planning phase can provide time for additional support needed by vendors such as vendor training.
- Encourage Principal Investigators (PIs) to have pre-proposal discussions with the Facility Operations Team. These discussions would:
 - Help PIs conceptualize the experiment (test),
 - Develop better budget estimates for the proposals, and
 - Reduce changes during planning phase.
- Facilities Operations has identified the need for training on CAD skills and to include schedule contingency for the rain/hurricane season aligned with the historical climate data.

Pedro Lomonaco – OSU Hinsdale Wave Research Laboratory (HWRL)

- OSU has two different test facilities to provide different water forces – nearshore hydrodynamics, tsunami, and coastal structures. Original facility established in 1972. HWRL became a part of NHERI in 2016.
- As part of the project planning, the Facility may have to pre-test the actions to be able to determine the model conditions needed for the experiment.
- Some identified Lessons Learned –
 - Estimation of time and costs for specimen (model) seems to be always underestimated.
 - Need to discuss scheduling time for planning and execution of tests with the PI. Need to align the Facility’s annual calendar with the PI’s desired academic calendar.
 - Outsourcing works very well but requires time and effort.
 - Communication between PI and Experimental Facility

Facilities have surveyed the PI’s. Overall the PI’s are happy but the Facilities haven’t received detailed feedback from the surveys. PI’s are focused on the quality of the data and schedule is less important. The Facilities are customer service focused and probably the basis for the positive feedback. Many of the PI are not involved in the details of the experiment. The use of “tele-presence” helps the scheduling “jam” so not every PI wants their experiment executed during the spring break.

The issue associated with under budgeted Specimen cost may partially be a marketing issue because of the desire for Proposals to maximize the benefit/value ratio. This maybe an area that could use NSF involvement.

Best Practices:

- Involvement of the Facility with the PI before proposal submission to improve on the specimen costs estimates.