



# **Guidelines for Proposal Preparation**

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NHERI Lehigh EF Operations Manager

# Outline

- Funding Opportunities
- Proposal Process
  - Pre-proposal Stage
  - Proposal Writing Stage
  - Post-Award Stage



# Funding Opportunities

- NHERI Lehigh EF is available for utilization for projects funded through both public and private sources
  - NSF-funded projects that utilize NHERI Lehigh EF have specific costs that qualify for funding through one of the following sources:
    - NHERI Lehigh Operations and Maintenance budget
    - NSF-funded research project
  - Projects funded by all non-NSF sources are responsible for all costs associated with project budget
- Upcoming NSF Program Solicitations
  - [Engineering for Natural Hazards](#) (ENH)
    - Proposal deadline: **January 13, 2017** and September 15, 2017

# NSF Engineering for Natural Hazards

- Research areas supported by the ENH program include, but are not limited to, the following:
  - Understanding and modeling the underlying physics of the performance of civil infrastructure subjected to natural hazards;
  - Advances in design and decision theory for existing and new sustainable civil infrastructure to achieve desired system-level performance under lifetime single natural hazard or multiple hazard loadings;
  - Advances in geotechnical engineering for design and construction of natural hazard-resistant foundations and geostructures, liquefaction mitigation, soil-foundation-structure interaction, levee and earth dam stability, and landslide, mudflow and debris flow analysis and mitigation, with a focus on field or system performance; and
  - Advances in computational modeling and simulation that integrate theory, computation, experimentation, and data, as appropriate, to advance natural hazard mitigation for civil infrastructure.

# NSF Engineering for Natural Hazards

- The ENH program supports research that utilizes the NSF-supported NHERI cyberinfrastructure and earthquake and wind engineering experimental facilities (outlined below).
  - Network Coordination Office at Purdue University
  - [Cyberinfrastructure](#) at the University of Texas at Austin;
  - [Twelve-Fan Wall of Wind](#) at Florida International University;
  - [Large-Scale, Multi-Directional, Hybrid Simulation Testing Capabilities](#) at Lehigh University;
  - [Large Wave Flume and Directional Wave Basin](#) at Oregon State University;
  - [Geotechnical Centrifuges](#) at the University of California, Davis;
  - [Large, High-Performance Outdoor Shake Table](#) at the University of California, San Diego;
  - [Boundary Layer Wind Tunnel, Wind Load and Dynamic Flow Simulators, and Pressure Loading Actuators](#) at the University of Florida; and
  - [Large, Mobile Dynamic Shakers for Field Testing](#) at the University of Texas at Austin
  - Post Disaster, Rapid Response Research (RAPID) Facility at University of Washington.
- All ENH awardees are strongly encouraged to utilize the NSF-supported NHERI cyberinfrastructure resources (<http://www.designsafe-ci.org>) for archiving and sharing of their research data in the NHERI Data Depot as part of their proposal's Data Management Plan, using and contributing computational modeling and simulation tools, accessing high performance computing resources, and broadly disseminating research outcomes.

# Proposal Process

## 1. Pre-Proposal Stage

(1.1) Interactions with NHERI Lehigh EF

## 2. Proposal Writing Stage

(2.1) Research Plan  
(2.2) Facilities, Equipment, and Other Resources  
(2.3) Schedule  
(2.4) Budget  
(2.5) Data Management Plan

## 3. Post-Award Stage

(3.1) Researcher Agreement & Site Utilization Forms  
(3.2) Researcher Training  
(3.3) Scheduling of Testing  
(3.4) Execution of Testing  
(3.5) Post-Test Data Archiving

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# 1. Pre-proposal Stage

- (1.1) Interactions with NHERI Lehigh EF to establish how facility can accommodate researcher needs
  - Primary Contact:
    - Chad Kusko – Facility Operations Manager
      - Email: [chk205@lehigh.edu](mailto:chk205@lehigh.edu)
  - Important questions to consider at this stage:
    - What is the proposed testing idea and does the proposed idea fit within the technical capabilities of the NHERI Lehigh EF?
    - Does NHERI Lehigh EF have the necessary equipment/instrumentation for the proposed idea?
    - To what solicitation (and for which deadline) will the proposal be developed?
    - What additional information is available for EF or is required from EF by researcher for proposal?



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# 2. Proposal Writing Stage

- Recommended steps for the researcher developing proposal:
  - Review NSF Proposal and Award Policies and Procedures Guide (NSF 16-1; effective January 2016)
    - Chapter II: Proposal Preparation Instructions
  - Review NHERI Lehigh EF Facility User's Guide
  - Communicate with NHERI Lehigh EF
    - Chad Kusko – Facility Operations Manager
      - Email: [chk205@lehigh.edu](mailto:chk205@lehigh.edu)
- Important Information to be discussed with NHERI Lehigh EF:
  - (2.1) Research Plan
  - (2.2) Facilities, Equipment, and Other Resources
  - (2.3) Schedule
  - (2.4) Budget
  - (2.5) Data Management Plan

# 2. Proposal Writing Stage

- (2.1) Research Plan
  - Items to be provided by researcher (with respect to utilization of facility)
    - General plan of work envisioned, including broad design of activities to be undertaken at NHERI Lehigh EF
    - Description of experimental methods and procedures required by NHERI Lehigh EF
- (2.2) Facilities, Equipment, and Other Resources
  - Items to be discussed with NHERI Lehigh EF (with respect to utilization of facility)
    - What resources are required of NHERI Lehigh EF?
      - Equipment?
      - Instrumentation?
      - Personnel?
    - Does NHERI Lehigh EF have these resources?
    - Are the capabilities required of the NHERI Lehigh EF established or do they need to be developed?
    - Are there additional ATLSS resources required for this proposal?
  - NHERI Lehigh EF can provide information on EF as requested

# 2. Proposal Writing Stage

- (2.3) Schedule
  - What is the proposed time-frame envision for utilization of NHERI Lehigh EF resources?
    - Equipment
    - Instrumentation
    - Physical space requirements (footprint in laboratory)
    - Technical staff
- (2.4) Budget
  - NHERI Lehigh EF Operations and Maintenance budget could be used to support qualified costs
    - NSF-funded projects that utilize NHERI Lehigh EF have specific costs that qualify for funding through one of the following sources:
      - NHERI Lehigh Operations and Maintenance budget
      - NSF-funded research project
    - Projects funded by all non-NSF sources are responsible for all costs associated with project budget

# 2. Proposal Writing Stage

- (2.4) Budget
  - Where can you find information on budgeting at NHERI Lehigh EF?
    - NHERI Lehigh EF Rate Schedules (for [NSF-funded](#) and [non-NSF funded projects](#))
      - Provides use fee rates to utilize NHERI Lehigh EF equipment and instrumentation and other ATLSS (non-NHERI) equipment and instrumentation
      - Provides NHERI Lehigh EF personnel rates
    - NHERI Lehigh EF [Responsibility of Costs](#)
      - Assigns costs for NSF funded projects to either the NHERI Lehigh EF or the NSF-funded research project
    - Contact NHERI Lehigh Operations Manager with questions or for additional information
      - Chad Kusko, [chk205@lehigh.edu](mailto:chk205@lehigh.edu)
        - Lehigh University audited indirect cost rate
- (2.5) [Data Management Plan](#)
  - What are the proposer's plans for data management and sharing of the research products?
    - Types of data, samples, software, etc. to be used at NHERI Lehigh EF
    - The standards used for data and metadata format and content
    - Plans for archiving data, samples, and other research products

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# 3. Post-Award Stage

- (3.1) Compliance Documentation and Site Utilization Forms
  - NHERI specific requirements being developed and finalized
  - For NHERI, these are expected to include:
    - [Equipment Facilities Policy Compliance Check \(ESPCC\)](#)
      - To be completed by an equipment facility representative, with supporting information provided by the researcher. The ESPCC assures policy compliance with respect to:
        - experimental feasibility,
        - safety,
        - budget,
        - schedule, and
        - data.
    - [Site Utilization Request Form \(SURF\)](#)
      - Outlines key terms associated with the project
      - This form would be an agreement between equipment site(s), researcher, and NHERI

# Post-Award Stage

- (3.1) Experimental Site Utilization Form:
  - Project information/Summary
  - Summary of Facility Requirements
    - Description of planned experiments
    - Description of experimental site resources needed
    - Scheduling for experimental site usage
    - Description and scope of special experimental site services needed
    - Project-specific risks and safety issues and associated mitigation plans
    - Roles and responsibilities for facility and researcher
    - Data Sharing and Archiving plan



# 3. Post-Award Stage

- (3.2) [Researcher Training](#)
- (3.3) Experimental Test Plan/Scheduling of Testing
  - Experimental Test Plan (ETP)
    - Detailed document that outlines specific testing to be done at EF
      - Project scope (details of specimens, fabrication location, erection, instrumentation, data acquisition, testing plans, and demolition)
      - Detailed list of equipment, # of days of equipment site use, for entire duration of experimental activities
      - Project-specific safety requirements
      - Anticipated project schedule (for specimen construction, installation, testing, raw data upload, and demolition)
  - NHERI Lehigh EF will work with ATLSS Center staff for coordinating the schedule of research project
    - Resources assigned based on critical milestones of respective projects in order to maximize efficiency of laboratory operations
    - NHERI Lehigh Operations Manager will report schedule to the NCO Facility Scheduling Group for integration into overall NHERI facilities schedule
- (3.3) Execution of Testing
  - NHERI Lehigh EF will provide support for experimental preparation within the laboratory and operate equipment in order to complete testing in collaboration with research team
- (3.4) Post-Test Data Archiving
  - NHERI Lehigh IT Manager will provide assistance to researchers with data management, including data backup on local repository and data upload to NHERI repository

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