

**Letter of Agreement between
Purdue University, on behalf of its Natural Hazards Engineering Research
Infrastructure (NHERI) – Network Coordination Office (NCO) Center
and
The Foundation EUCENTRE, European Centre for Training and Research in
Earthquake Engineering
on
Earthquake Engineering Research Using EUCENTRE and NHERI Facilities**

The National Science Foundation (NSF) of the United States of America (USA) launched the Natural Hazards Engineering Research Infrastructure (NHERI) program in 2015 to improve our understanding of and ability to resist and recover from the impact of earthquake and windstorm hazards, and in coastal areas, tsunami and storm surge. The NHERI components include a Network Coordination Office (NCO), a site for cyber-infrastructure (designsafe-ci.org), seven experimental facilities a computational modeling and simulation center and a post-disaster, rapid response research facility. NHERI is managed and operated through NSF support for the benefit of the United States coastal, earthquake and wind engineering communities. Through the NHERI-NCO Center, national and international partnerships as appropriate are built to enhance collaboration and accelerate the pace of research to mitigate risks associated with earthquakes and windstorms and related tsunami and storm surge hazards.

The EUCENTRE Foundation, European Centre for Training and Research in Earthquake Engineering of Pavia, Italy, (EUCENTRE) developed and constructed an array of experimental laboratories focused on seismic simulation of earthquake effects on full scale structures and non-structural elements, which include an high performance uniaxial shake table, a multiaxial shake table, a bearing tester system for real scale testing of isolation devices, a damper tester system for tests on dissipative devices and a system for hybrid simulation and pseudo static tests. The EUCENTRE experimental facilities were constructed in the period 2005-2017 and have performed several hundred of tests.

In consideration of the above, Purdue University on behalf of the NHERI-NCO Center, and the EUCENTRE Foundation, (hereinafter, each a “Party” and collectively, the “Parties”) agree to cooperate in the implementation of joint research in **earthquake engineering**, utilizing NHERI facilities (designsafe-ci.org) and the experimental laboratories of EUCENTRE, to the extent possible within the existing laws and regulations of their respective countries, under the conditions as set forth below:

1. **Scope of Agreement.** This Agreement commemorates the Parties’ intent to enter into joint research to improve scientific knowledge and engineering practice in earthquake-resistant design and retrofit of existing infrastructure by conducting experimental research in earthquake engineering using NHERI facilities and the experimental laboratories of EUCENTRE. The Parties agree that the scope of the collaboration on the joint research is as follows:
 - a. Facilitating experimental research in earthquake engineering, including full-scale earthquake testing of structures;
 - b. Facilitating research and development in the numerical simulation of seismic behavior and the collapse of structures;
 - c. Facilitating research and development on cyberinfrastructure systems for the support of a collaboration network in earthquake engineering;
 - d. Organizing research coordination meetings, symposia and workshops; and

- e. Facilitating research exchange programs.

Before implementing any particular research activity, the parties will discuss the opportunities and challenges presented by such activity and will thereafter enter into specific activity agreements based on mutually agreed objectives and outcomes for each research activity as discussed in Section 3 below.

- 2. **Period of Agreement.** This Agreement shall be effective upon the date of final execution by both Parties and will remain in force for a period of five (5) years, unless terminated earlier by either Party. This Agreement may be renewed beyond five years by mutual written agreement. In addition, either Party may terminate this Agreement at any time and for any reason by providing the other party at least thirty (30) days prior written notice.

- 3. **Designate Liaison; Initiation of Specific Activity Agreements.**

- a. **Designated Liaison.** Each Party will provide a principal point of contact between the NHERI side and the EUCentre side. This point of contact will serve as the liaison on each side with respect to matters of implementation of the joint research program. The NHERI-NCO Center Director, on behalf of Purdue, is the principal coordinator of NHERI activities under this Agreement. The scientific responsible of the EUCENTRE Laboratories is the principal coordinator of EUCENTRE activities under this Agreement.

- b. **Initiation of Specific Activity Agreements.** Specific research activities will be initiated by the Designated Liaison of each party. The parties will submit a request for an Activity Agreement to Purdue's Sponsored Program Services Contracting department that includes basic information about the contemplated research activity. Each distinct collaboration program or activity will be described in a separate Activity Agreement drawn up jointly by Purdue and EUCENTRE and signed by the authorized signatories of each party. Such agreements will specify the names of those individuals within each Party responsible for the implementation of the program and set forth all terms and conditions associated with the activity. The parties understand that each Activity Agreement may have different circumstances with respect to the personnel, types of activities, intellectual property and other deliverables that Purdue University may be required to contribute. The Parties will perform a separate risk assessment on the legal, tax and other liabilities that may arise under each Activity Agreement and to structure their deliverables (if any) under the Activity Agreement in a way that maximizes the cost and liability efficiencies for the Parties. Purdue and EUCENTRE also reserve the right to assign and/or subcontract any or all of its obligations under this Agreement and/or any Activity Agreement to any of its subsidiaries or affiliates (including affiliates controlled but not owned by Purdue or any trustees of Purdue). All activities undertaken must conform to the policies and procedures in place for each Party, as well as the national, regional and local laws and regulations of each country where the parties are located and where the research is performed.

- 4. **Joint Technical Coordinating Committee.** The Parties will establish a Joint Technical Coordinating Committee (JTCC), which will coordinate the implementation of this Agreement and the joint research program. The JTCC shall meet as needed to achieve this objective but not less than once per year in person or via remote participation. The JTCC will be responsible for:

- (a) Exercising oversight and direction of this Agreement and the joint research and establishing guidelines, as necessary, for the use of the facilities.

- (b) Reviewing and forwarding to the Parties for approval recommended amendments to this Agreement.
- (c) Defining the cooperative activities subject to this Agreement.
- (d) Monitoring and reporting to the Parties the cooperative activities and the joint research program, and providing an annual status report to the Parties.
- (e) Developing and maintaining guidelines and procedures to be followed by researchers when making application to use EUCENTRE Laboratories and NHERI facilities in consultation with the Parties (Item 6)
- (f) Developing and maintaining policies and guidelines concerning intellectual property rights and inventions for the approval of the Parties (Item 9), and
- (g) Developing and maintaining data sharing policies and guidelines that reflect the special character of NHERI/EUCENTRE collaboration for the approval of the Parties (Item 10).

The JTCC will consist of the members listed below. Additional members may be added to the JTCC from time to time, subject to the approval of the Parties:

- (a) Director for NHERI-NCO Center, or his/her representative who will act as Co-Chairperson
- (b) Chair of the NHERI- Council (all NHERI Awardee Principal Investigators), or his/her representative
- (c) Principal Investigator of NHERI Cyberinfrastructure Award, or his/her representative
- (c) President of EUCENTRE Foundation, or his/her representative
- (d) Director of science of the Foundation EUCENTRE
- (e) Scientific responsible of EUCENTRE Laboratories

Working Groups may be established from time to time by the JTCC to assist the JTCC with its responsibilities. **In general, the Working Group(s) will comprise U.S. and Italian earthquake engineering and information technology researchers, selected from those who are actively collaborating on joint research and development projects.** These Group(s) will be co-chaired by a U.S. and an Italian researcher.

Researchers who plan an experiment using EUCENTRE Laboratories and/or NHERI facilities for U.S.–Italian joint research shall follow the application guidelines to use these facilities established by the JTCC. In general, researchers will be expected to submit a preliminary application to use these facilities to the host Party before submitting proposals for funding to sponsoring agencies. Once funding is approved, formal applications will be required according to a procedure to be determined by the JTCC in consultation with EUCENTRE and NHERI. The host Party, in its sole discretion, shall approve the use of its facilities based on consideration of the budget, schedule and feasibility (safety review). Participating researchers and users shall observe the laws and regulations of the host country and the rules and regulations of the host Party.

5. **Facility Use.** Cooperative activities under this Agreement are subject to and dependent upon the availability of appropriate funds, personnel, and resources, in accordance with the Implementing Arrangement. Unless otherwise mutually agreed, each Party will bear all costs of its activities. The Parties shall make every effort to obtain the funds necessary for these activities. However the provision and availability of funds to conduct experimental research and the cooperative activities are outside the scope of this Agreement. Fees for using the facilities shall be paid by users in accordance with the schedule of fees to be published by the host Party on an annual basis.
4. **Intellectual Property.** The Parties will provide for the protection of prior existing intellectual property rights and the protection of any intellectual property rights arising

out of the joint research and any cooperative activities. The JTCC shall develop policies and guidelines on intellectual property rights and inventions, which shall be approved by NHERI, Purdue and EUCENTRE. Nothing in this Memorandum will prejudice the rights and obligation of each Party under any existing or future international or multilateral agreement related to the protection of intellectual property. The Parties understand and acknowledge that NHERI is funded by NSF, and that NSF may reserve intellectual property rights in connection with any and all research activities conducted under this Agreement through its funding agreements. For each Activity Agreement, the parties will use best efforts to determine the rights NSF has reserved under its agreement and to structure the intellectual property rights between the Parties in the Activity Agreement so as to preserve and to be consistent with any reservation of rights by NSF.

6. **Publication.** The Parties agree that the results of the joint research shall be made available to the research community through peer-reviewed journal articles, conference proceedings, technical reports and other publications channels.
7. **Data Sharing and Storage.** The Parties agree that the data and metadata derived from the experiments of joint research shall be stored in an electronic data repository as it is recorded for immediate access by members of the joint research team. In general, data publication shall be in accordance with NHERI Data Curation & Publication Guidelines until such time as if necessary specific policies and guidelines reflecting the special character of the NHERI/EUCENTRE collaboration are developed by the JTCC and approved by both EUCENTRE and NHERI. The public release of experimental data shall occur no later than two (2) years from the date of the experiment. This period supersedes that required in the NHERI policies and guidelines. It may be shortened by the JTCC with the approval of both EUCENTRE and NHERI.
8. **Annual Review.** All the projects running behind the current agreement will be subjected to an annual review conducted by the Parties, including an assessment of scientific and technical achievements for the past year, and to plan for the coming year. Additional reviews may be held at the request of either Party to address the terms and conditions of this Agreement and other matters of mutual interest.
9. **Use of Name.** The Parties agree to not use the name of the other Party, nor of any member of the other Party's staff, in in any publicity, advertising, or news release without the prior written approval of an authorized representative of that other Party.
10. **Foreign Corrupt Practices Act.** Purdue University and EUCENTRE represent and warrant to each other that they are aware of the requirements of the United States Foreign Corrupt Practices Act (the "FCPA") and that they will not, and **will not** allow their owners, employees, representatives, officers, directors, contractors or other agents to take any action in connection with this Agreement or any separate cooperative agreement **to provide, offer or promise to provide, or authorize the provision directly or indirectly of, any money, gift, loan, service or anything of value to (i) any government official (or any agent, employee or family member thereof), (ii) any political party or candidate for political office, or (iii) any person, while knowing that all or a portion of such money or thing of value will be offered, given or promised, directly or indirectly, to any of the foregoing in (i) or (ii), for the purpose of obtaining or retaining business or funding, to direct business or funding to any person or entity, or to secure any other improper advantage.**
11. **Prevailing Language.** If this document is negotiated and/or executed in two languages, the English version of this document represents the understanding of both Parties. Any other version is provided as a translation. In the event of conflict between the two versions, the English version will prevail.

12. **Nature of Agreement.** This Agreement sets out the framework for the Parties' collaboration on research activities and use of facilities. This Agreement does not bind either Party to any particular research activity or facilities use, such terms to be negotiated by the Parties as provided in this Agreement.
13. This Agreement reflects an arrangement that is currently satisfactory to the Parties. The Parties agree to negotiate additional amendments to this Agreement as required to meet the evolving requirements of the joint research program. Either Party may at any time propose amendments or modifications to this Agreement, which will be placed into effect upon approval by both Parties and NHERI (to the extent NHERI's consent is required) and execution of a written amendment by the authorized signatory of both Parties.
14. In the case of a dispute that arises relating to any aspect of cooperation under this Agreement, the parties may attempt to resolve such dispute through friendly negotiation, or either party may elect to terminate the agreement pursuant to the previous provision. Termination shall be the sole remedy for breach of this Agreement.

This Agreement will become effective upon the date of signature of the last cooperating Party to execute this Agreement and will continue in force for five (5) years from date of last signature or until modified or terminated by either Party giving written notice three months in advance to the other Party of its intention to terminate this Agreement. In case of termination, any existing joint research projects will be brought to an ordinary conclusion.
 For the Natural Hazards Engineering Research Infrastructure (NHERI)

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 Director, Sponsored Program Services, Purdue University
 On behalf of the NHERI-NCO Center Director

Date:

For the Foundation EUCENTRE

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 President

Date: