

PROT.EUC142/2018U

Dear Mr. Julio A. Ramirez
PURDUE UNIVERSITY
1040 S River Road
WEST LAFAYETTE, IN 47907

Pavia 11th July 2018

Dear Mr. Ramirez,

Attached, find the letter of Agreement between Purdue University, on Behalf of its Natural Hazards Engineering Research Infrastructure (NHERI) and Eucentre Foundation on Earthquake Engineering Research Using EUCENTRE and NHERI Facilities, signed by our President Riccardo Pietrabissa.

Best regards



EUCENTRE Foundation
Riccardo Pietrabissa

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

- (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 (Item10).

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

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: 5/25/18

For the Foundation EUCENTRE

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President

Date: 10 LUG. 2018

