

**Application Form for World Centre of Excellence on Landslide Risk Reduction**  
**2020-2023**

1. Name of Organization

**Institute of Geography, National Autonomous University of Mexico (UNAM)**

2. Name of Leader

**Irasema Alcántara-Ayala**

Affiliation: position

**Full Professor**

**Institute of Geography, National Autonomous University of Mexico (UNAM)**

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**04310, Coyoacán, Ciudad de México**

**Mexico City**

Core members of the activities

Names/Affiliations: (4 individuals maximum)

**Ricardo J. Garnica-Peña**

Institute of Geography, National Autonomous University of Mexico (UNAM)

**Ana Rosa Moreno**

Department of Public Health, Faculty of Medicine, National Autonomous University of Mexico

(UNAM)

**Javier Urbina Soria**, Faculty of Psychology, National Autonomous University of Mexico (UNAM)

**Sharon Ruiz Cortes**, Postgraduate Unit Geography, National Autonomous University of Mexico

(UNAM)

3. Date of Submission of Application

**August 15, 2019**

4. Activity scale and targeted region.

**1) Global, 2) Intercontinental, 3) Continental, 4) Regional, 5) National**

5. Short Title (10 words maximum) characterizing past and planned activities

**Integrated research on landslide disaster risk**

6. Objectives for the initial 3 years: (5 lines maximum; what you expect to accomplish?)

**Our objective** is to support capacity building for integrated landslide disaster risk research, including landslide risk mapping, risk perception, strategies of landslide risk communication and bridging the gap between science and policy making and practice. Likewise, we aim at contributing to the implementation of the **ICL Sendai Partnership** at local and national level.

7. Background Justification: (10 lines maximum)

The impact of landslide disasters in Mexico has increased dramatically in the last decade, particularly due to population growth, urbanization, increasing inequality, unsustainable practices and growing exposure to landslide hazards. Therefore, and in agreement with the Sendai Framework for Disaster Risk Reduction, managing disaster risks as opposed to managing disasters has become a significant challenge. From this perspective, awareness and understanding of risk, and preparedness for disaster, are essential for the management of risk at all levels. As such, our WCoE has identified the necessity to work, from an integrated research approach, on strategies of landslide disaster risk communication in pursuance of risk knowledge as a core of Disaster Risk Reduction, Management and Governance, particularly in mountain areas of Mexico, where exposure to landslides is a key ingredient of the social construction of disaster risk.

8. Resources available for WCoE activities

Personnel, Facilities, Budgets, and Affiliation and Contribution to ICL/IPL-GPC.

**Institute of Geography, UNAM**

Soils lab

National Laboratory for Earth Observation

Field equipment

Grants from UNAM to do research on landslides

Students grants to undertake postgraduate studies on landslides

9. Description of past activities related to risk reduction of landslides and other related earth system disasters (30 lines maximum)

- **Field campaigns with the participation of students:** a series of field campaigns have been developed involving students in the project, to undertake landslide identification and mapping, landslide inventories.

- **Development of community workshops:** A series of participatory community workshops have been developed in different communities of the Sierra Norte de Puebla (mountain range) to involve the community in the research projects.
- **Landslide disaster risk perception surveys** have been carried out, and results analyzed to identify risk **communication strategies** at local level.
- Several **Academic meetings** have been organized.
- Interaction and **advisory actions to local civil protection** units of the regions affected by landslides.
- **Promoting landslide research** among students.
- Supporting activities and **collaborating with the National Center for Disaster Prevention (CENAPRED)**.
- Promoting the application of **Forensic Investigations for Disasters**.
- Participating in the UNDRR activities at international level (Regional and Global Platforms).
- Participating in the **UNDRR Advisory Board for Latin-America and the Caribbean**.
- Publication of maps, scientific papers, book chapters and books.

10. Planned future activities /Expected Results: (20 lines maximum; work phases and milestones)

- We will continue working on evaluating the impact of landsliding in Mexico and to carry out integrated research on landslide risk. Activities will include: field work, instrumentation and monitoring, mapping, development of community workshops, risk perception analysis, slope stability analysis and landslide modelling, academic meetings.
- Supporting young researchers to become the future landslide researchers.
- Additionally, we will carry on working on working with the chamber of deputies and chamber of senators to produce the updated version of the national law of integrated disaster risk management and civil protection.
- We will also participate in academic courses for Civil Protection personnel and will organize a national multi-sectorial meeting aiming at establishing a national system of integrated disaster risk management.
- Building alliances between the academia, the policy makers and practitioners.
- Participating and collaborating for the success of the WLF5.
- Publication of papers, book chapters and books related to landslide disaster risk.

11. Beneficiaries of WCoE: (5 lines maximum; who directly benefits from the work?)

Young researchers, Communities where the research takes place, National Center for Disaster Prevention (CENAPRED), Civil Protection Units, Academia, and Policy makers.

12. References: 10 lines maximum, i.e. relevant publications, international/regional/national recognition supporting items 9-10.

Wu, C., Cui, P., Li, Y., Alcántara-Ayala, I., Huang C., Yi, S. (2018). Seismogenic fault and topography control on the spatial patterns of landslides triggered by the 2017 Jiuzhaigou earthquake, *Journal of Mountain Science*, 15(4): 793-807.

Satake, K., McLean, C., Alcántara-Ayala, I. (2018), Understanding Disaster Risk: The Role of Science and Technology, *Journal of Disaster Research*, 13, 7, 1168-1176

Murillo-García, F.G., Rossi, M., Ardizzone, F., Fiourucci, F., Alcántara-Ayala, I. (2017) Hazard and population vulnerability analysis: a step towards landslide risk assessment, *Journal of Mountain Science*, 14, 7, 1241–1261.

Murillo-García, F.G., Alcántara-Ayala, I. (2017), Landslide inventory map of the municipality of Teziutlán, Puebla, México (1942-2015), *Journal of Maps*, 13:2, 767-776.

Alcántara-Ayala, I., Sassa, K., Mikoš, M., Han, Q., Rhyner J., Takara, K., Nishikawa, S., Rouhban, B., Briceño, S. (2017) The 4th World Landslide Forum: Landslide research and risk reduction for advancing the culture of living with natural hazards, *International Journal of Disaster Risk Science* 8, 4, 498–502.

13. If your organization is an ongoing WCoE 2014-2017, please attach the articles reporting activities of WCoE, IPL project and ICL network published/contributed to either in *Landslides: Journal of International Consortium on Landslides* or/and the Fourth World Landslide Forum 2017.

**See attached documents**

14. List of published or planned reports of WCOE 2017-2020 in journal “Landslides” or “WLF5 books” for ongoing WCOE organization.

(Those organizations with no activity report/no achievement in WCOE 2017-2020 will not be accepted as the candidate of WCOE 2020-2023 to be submitted to the Independent Panel of Experts for WCOEs.)

## **Published**

Alcántara Ayala, I., Garnica-Peña, R.J., Murillo-García, F.G., Salazar-Oropeza, M.O., Méndez-Martínez A., Coll-Hurtado, A., (2018) Landslide disaster risk awareness in Mexico: community access to mapping at local scale, **Landslides** (IPL/WCoE Activities), 15, 8, 1691–1704.

Hernández-Moreno, G., Alcántara-Ayala I. (2017) Landslide risk perception in Mexico: a research gate into public awareness and knowledge, **Landslides**, 14, 1, 351–371.

Alcántara-Ayala I. (2018) TXT-tool 4.052-1.2: Landslide Risk Communication. In: Sassa K., Tiwari B., Liu KF., McSaveney M., Strom A., Setiawan H. (eds) Landslide Dynamics: **ISDR-ICL Landslide Interactive Teaching Tools**, 731-742, Springer, Cham.

Alcántara-Ayala I. (2018) TXT-tool 4.052-1.1: Landslide Risk Perception. In: Sassa K., Tiwari B., Liu KF., McSaveney M., Strom A., Setiawan H. (eds) Landslide Dynamics: **ISDR-ICL Landslide Interactive Teaching Tools**, 555-568, Springer, Cham.

Alcántara-Ayala, I., Garnica-Peña, R.J., Domínguez-Morales, L., González-Huesca, A., Calderón-Vega, A. (2017), The La Pintada landslide, Guerrero, Mexico: hints from the Pre-Classic to the disasters of modern times, **Landslides**, 14, 3, 277-291.

Garnica Peña R.J., Alcántara Ayala, I., 2017, Landslide synchronic evaluation by using Unmanned Aerial Vehicles (UAV): some insights on disaster risk in Teziutlán, Puebla, México, In: Mikos M., Tiwari B., Yin Y., and Sassa K., **Advancing Culture of Living with Landslides, Vol. 2**. Advances in Landslide Science, 209-218, Springer.

Alcántara Ayala, I., Murray V., Daniels P., McBean G., 2017, On the future challenges for the integration of science into international policy development for Landslide Disaster Risk Reduction, In: Sassa K., Mikos M. and Yin Y., **Advancing Culture of Living with Landslides, Vol. 1**. ISDR-ICL Sendai Partnerships 2015-2025, 143-154, Springer.

Alcántara Ayala, I., 2017, Landslides and Society-a foreword, In: Sassa K., Mikos M. and Yin Y., **Advancing Culture of Living with Landslides, Vol. 1**. ISDR-ICL Sendai Partnerships 2015-2025, 487-490, Springer.

## **Planned-WLF5**

WLF5, Theme 5, Submitted: Living with no landslides: the challenge to avoid the new construction of disaster risk, by Irasema Alcántara-Ayala

Note: Please fill and submit this form **by 15 August 2019** to ICL secretariat <[secretariat@iclhq.org](mailto:secretariat@iclhq.org)>