**CALL TEXT for CRA: Disaster Risk, Reduction and Resilience (DR3)**

1. **Background and Rationale**

The Belmont Forum welcomes transdisciplinary proposals to its Collaborative Research Action (CRA) on Disaster Risk Reduction and Resilience (DR3). For this call, we define disasters as extreme environmental events that negatively impact coupled human-natural systems, including but not limited to impacts on economic, health, infrastructure, and social subsystems. Extreme environmental events may be generated by natural forces, including climate change, and/or anthropogenic causes.

In recent decades, through national, regional, and international endeavors, our global society has gradually learned to manage the devastating consequences of disasters and acknowledge that disaster mitigation can be most efficiently and effectively managed by collaborative engagement of all sectors of our society and through the integration of interdisciplinary scientific understanding with stakeholder knowledge. Hence, this call specifically focuses on research efforts involving co-engagement and collective actions of all stakeholders to ameliorate disaster risk and enhance overall societal resilience to disasters. A good context for this call can be found in four priority areas for disaster risk reduction identified in the Sendai Framework for Disaster Reduction, namely: (1) understanding disaster risk; (2) strengthening disaster risk governance; (3) investing in disaster reduction for resilience; and (4) enhancing disaster preparedness for effective response, and to “build back better“ in recovery, rehabilitation and reconstruction.

The key questions are:

* How can we measure disaster loss reduction in the absence of reliable loss data on the economic and human impacts?
* What resilience measures might be of value in terms of reduction of potential loss and damage plus reduced future risk?
* What types of pre-disaster planning and investments are strategic to resilient development in terms of bouncing forward rather than bouncing back from actual disasters?
* What disaster risk governance modalities are effective in enabling collaborative engagement of all stakeholders to effectively manage disasters?

1. **DR3 main themes**

So that we may advance the understanding and approaches needed for DRR and DRR-related frameworks, proposals to the Belmont Forum DR3 CRA must address one of the following three themes (A, B, C):

1. **Assessment and Reduction of Disaster Risk**

Typical disaster risk is systematic, complex, and dynamic. Hence, both intensive (high severity mid-to-low frequency events) and extensive (low severity, high frequency and linked to local hazards) disasters are of interest to this call. In this regard, quantitative risk identification, based upon comprehensive data and information, is an important step to systematically assess potential impacts of a disaster. To reduce risk, it is essential to collaboratively mobilize knowledge from scientists and stakeholders and implement efficient communication modalities amongst all such communities. Effective proxy measures, such as vulnerability, to evaluate the risk are essential while considering multiple attributes, both physical and socio-economic, of a disaster. Therefore, under this call for proposals, considerations of physical as well as social parameters are imperative. Many disasters transcend national boundaries and impact society and ecosystems on widely varying spatial and temporal scales. Hence, under this call, we seek to support collaborative research efforts of transnational teams applying trans-disciplinary approaches to develop innovative and implementable strategies and technologies for disaster risk reduction and enhancing societal coping capabilities. Equally important are considerations of connecting end-to-end demands and supplies for strengthening disaster management and related governance mechanisms.

1. **Enhancing Disaster Resilience**

Disaster resilience is generally defined as the ability of different stakeholders to adapt to or recover from disasters or hazardous stresses with bearable or minimal impact on long-term prospects for sustained development. Stakeholders in these scenarios can vary, from individuals through communities to human-natural ecosystems across wider regions; so, the scale is important as well as the stakeholder and disaster type in building resilience. Effective pre- and post-disaster planning and action takes into account these variables in developing appropriate hazard mitigation measures. These efforts are inherently transdisciplinary nature, involving stakeholders with a breadth of natural and social sciences as well as engineering, technological and information sciences, including IT, broadcast and digital communications. In this call, proposers are encouraged to consider post-disaster recovery options that leverage transdisciplinary knowledge, technological options, and policy prescriptions to meet challenges of disaster management and sustainable development. Specifically encouraged is the consideration of the continuity of people’s survival between normal and crisis situations. In addition, local and community response, risk reduction and resilience are suggested to be considered.

1. **Cyber-Enabled Effective Disaster Response**

Disaster response encompasses all immediate actions before and after a disaster, that minimize casualties, reduce damages and prevent further losses. These include modalities such as early warning systems, evacuation and relocation, search and rescue, damage assessment, immediate & continuing aid, rapid restoration of vital infrastructure, and business continuity plans (BCPs) for public and private organizations. All such modalities typically involve collaborations among scientists, governments, and different stakeholders. In this context, a key to successful disaster emergency operation is the efficient management of data, information, and knowledge to facilitate the choice of an optimal operational action plan.

To rapidly and effectively respond to a disaster, potential impacts have to be simulated for each disaster and cohorts of stakeholders. These suites of modeled scenarios involve many parameters, including cultural, social, geographical, technological, economical, etc., and require the assistance of ICT and well-curated, up-to-date information. This CRA welcomes proposals which advance capabilities in complex scenario modeling and Artificial Intelligence (AI) for rapid disaster response. Proposals should also include innovative and stakeholder-appropriate communication methods to inform decision-makers and/or transmit actions to an affected population.

1. **Key Issues to be addressed by proposals in response to this call**

Within these broad themes related to risk reduction and resilience, we require proposing teams to address two or more of the elements below in their project (a-e):

1. Specific description of a systems approach to develop, test, and implement effective measures to mitigate disaster impacts
2. Focus beyond design events to include consideration of the entire possible spectrum of events related to disasters
3. Ensure infrastructure robustness to disasters
4. Increase the recovery capacity of a society
5. Demonstrate outcomes of disaster risk reduction practices that enable enhanced societal resilience in the future
6. **Call statement**

Proposals will be due on 10th June 2019.

This call will fund three-year projects starting in late 2019 or early 2020.

Descriptions of funding and in-kind support available for this call are featured in the organizational annexes. Please review the annexes and contact the appropriate program representative to determine the eligibility of the project.

All projects must draw on support from at least three of the resource providers featured in the annexes. Broad geographic participation is encouraged to increase the scalability and applicability of the project outcomes.

Consortium partners that are not eligible for funding from any of the participating funding agencies can participate in the project at their own expense.

Participants are allowed to seek support for engaging with scientists and capacity building in developing countries.

1. **Eligibility Requirements**

All projects are required to co-develop and co-implement projects with integrated expertise from natural/climate science, social science and humanities, and stakeholders. “Stakeholder” is broadly interpreted for this CRA, drawing from a breadth of sectors, including but not limited to the public sector, intergovernmental, management and policy, citizenry, the private sector, and NGOs. The added value of the international consortium and national investment should be clearly demonstrated.

All proposed full projects to DR3 will require a data management plan. If needed, data management plan templates are available from the Belmont Forum website. The plan should include information about types of data, information, models, software, workflows and code, or other digital products being generated by the project. It should outline the accessible archives or another open repository where these products and accompanying metadata will be housed.

Belmont Forum Open Data Principles are intended to improve and promote the dissemination of knowledge, the access to the data and their reuse thereby improving the efficiency of scientific discovery and maximizing the return on research funding. The funded CRA DR3 projects are expected to make their best efforts to ensure open access to data as soon as possible. Awarded projects will be checked for compliance to open data procedures at the mid-term and end-term valorization events using information provided to the BFgo reporting system.

Each proposed consortium budget should include travel funding for at least 3 consortium partners to participate in international kick-off, mid-term and end-term valorization meetings.

1. **Post-award requirements**

Kick-off, mid-term and end-term valorization activities will be held at accessible international locations. Please plan for at least 3 project consortium members representing different knowledge systems (natural/climate, social/humanities, and stakeholder perspectives) to attend.

Awarded projects must adhere to the Belmont Forum open data policy. Program coordinators will check compliance of the open data policy in awards at the required mid-term and end-term valorization events.

Awarded projects will also submit integrated annual reports into the Belmont Forum grant operations (BFgo) reporting system. The lead PI will receive log-in credentials after the award has been confirmed. Inputs to this system should reflect perspectives of the entire consortium. The reports are due annually on June 15th for the lifetime of the award.

1. **Timeline**

* Opening Date of the Call: 5th March 2019
* Full Proposals Due By: 10th July 2019
* Projects Begin: end of 2019 or beginning of 2020

1. **How to apply**

All relevant call documents for DR3, including guidelines for applicants and the submission portal can be found at the Belmont Forum Grant Operations site (https://bfgo.org).