



## **Development and Implementation of Collaborative e-Infrastructures and Data Management for Global Change Research**

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An e-infrastructure that supports data-intensive, multidisciplinary research is needed to accelerate the pace of science to address 21st century global change challenges. Data discovery, access, sharing and interoperability collectively form core elements of an emerging shared vision of e-infrastructure for scientific discovery. The pace and breadth of change in information management across the data lifecycle means that no one country or institution can unilaterally provide the leadership and resources required to use data and information effectively, or needed to support a coordinated, global e-infrastructure.

An 18-month long process involving ~120 experts in domain, computer, and social sciences from more than a dozen countries resulted in a formal set of recommendations that were adopted in fall, 2015 by the Belmont Forum collaboration of national science funding agencies and international bodies on what they are best suited to implement for development of an e-infrastructure in support of global change research, including:

- adoption of data principles that promote a global, interoperable e-infrastructure, that can be enforced
- establishment of information and data officers for coordination of global data management and e-infrastructure efforts
- promotion of effective data planning and stewardship
- determination of international and community best practices for adoption
- development of a cross-disciplinary training curriculum on data management and curation

The implementation plan is being executed under four internationally-coordinated Action Themes towards a globally organized, internationally relevant e-infrastructure and data management capability drawn from existing components, protocols, and standards. The Belmont Forum anticipates opportunities to fund additional projects to fill key gaps and to integrate best practices into an e-infrastructure to support their programs but that can also be scaled up and deployed more widely.

### **Background**

The Belmont Forum is a global consortium established in 2009 to build on the work of the International Group of Funding Agencies for Global Change Research toward furthering collaborative efforts to deliver knowledge needed for action to avoid and adapt to detrimental environmental change, including extreme hazardous events.