



***e-Infrastructures  
and Data  
Management***

**BELMONT**  
F O R U M

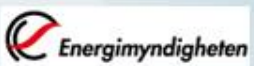
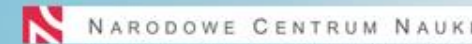


***Added value  
of multi-national funding  
of inter and transdisciplinary science***



科技部  
Ministry of Science and Technology





# Research at the nexus of funding, research, and stakeholder interest



*Coastal Vulnerability*

*Arctic Observing and Science for Sustainability*



*Freshwater Security*

*Mountains as Sentinels of Change*



*Food Security and Land Use Change*

*Climate Predictability and Inter-regional Linkages*



*Biodiversity and Ecosystem Services*

*Food-Water-Energy Nexus*

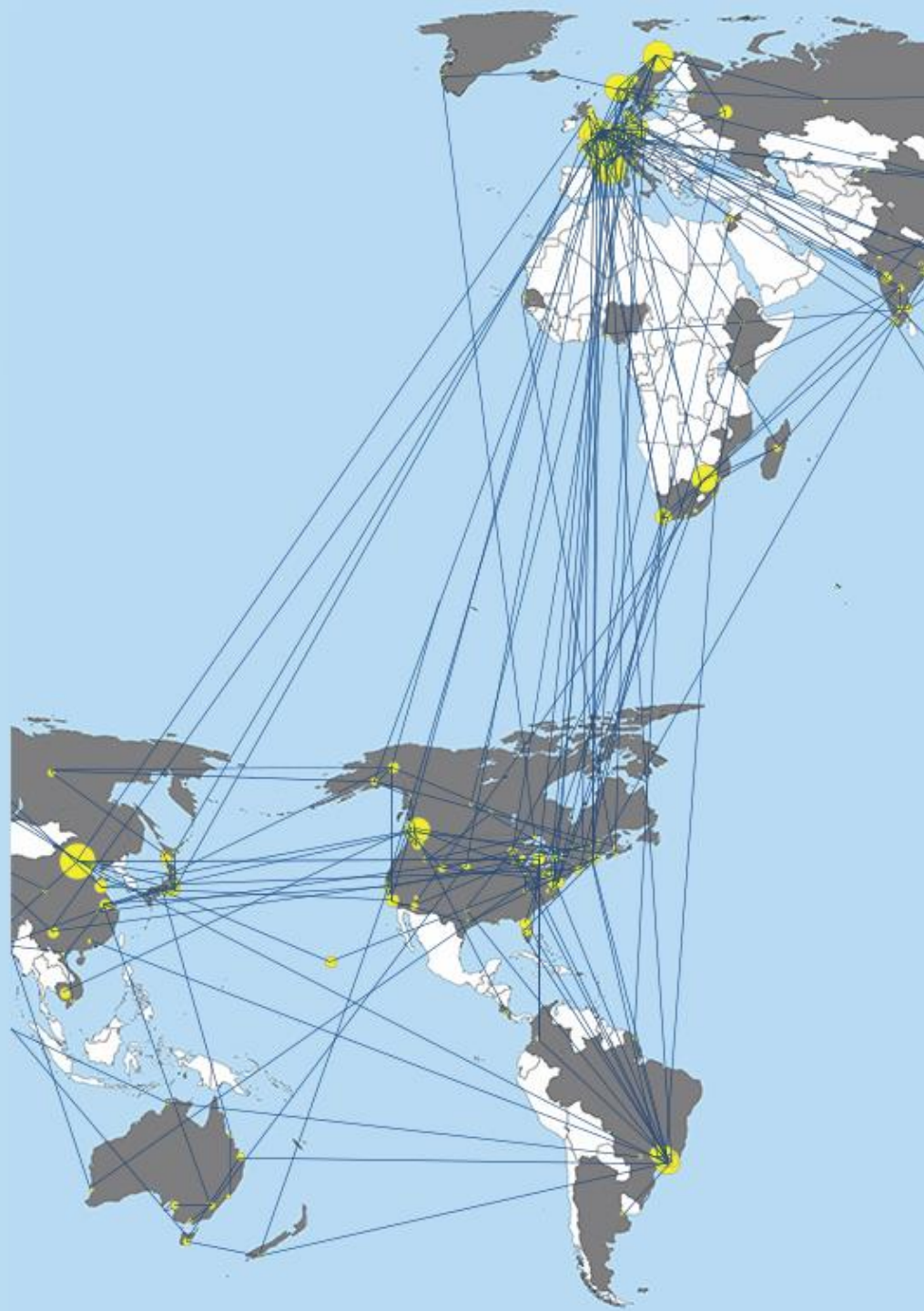


*Transformations to Sustainability*



# *Building a global transdisciplinary culture*

- ▶ Co-advancement of science and society
- ▶ Developing transboundary capacity to address common needs
- ▶ Creating an expectation of transparency
  - Between sectors, including industry
  - In products and communication



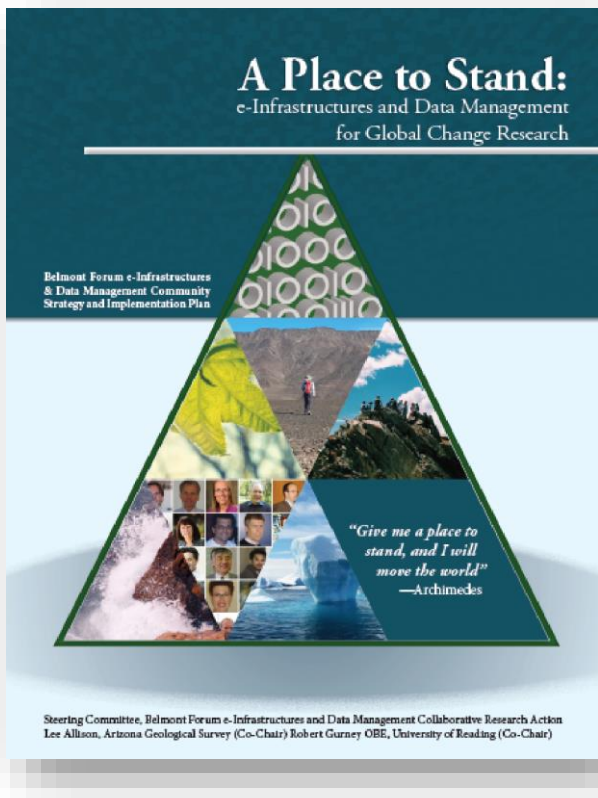
# E-INFRASTRUCTURES & DATA MANAGEMENT CRA (e-I&DM)

“...the need to address global environmental challenges requires a **more coordinated** approach to the **planning, implementation, and management of data, analytics and e-Infrastructures**” through international collaboration.

--Belmont Forum  
New Delhi, February 2013



# COMMUNITY STRATEGY AND IMPLEMENTATION PLAN



CSIP delivered June 2015

Belmont Forum adopted Data Principles and Policy October 2015

CSIP identified a path forward toward open data and open science for Belmont Forum-funded transdisciplinary research

# BELMONT FORUM DATA POLICY & PRINCIPLES

Data should be:

**Discoverable** through catalogues and search engines

**Accessible** as open data by default, and made available with minimum time delay

**Understandable** in a way that allows researchers—including those outside the discipline of origin—to use them

**Manageable and protected** from loss for future use in sustainable, trustworthy repositories

The Belmont Forum and its members will support and promote this data policy and principles with the intent of making these data principles enforceable over time.



# BELMONT FORUM DATA POLICY & PRINCIPLES

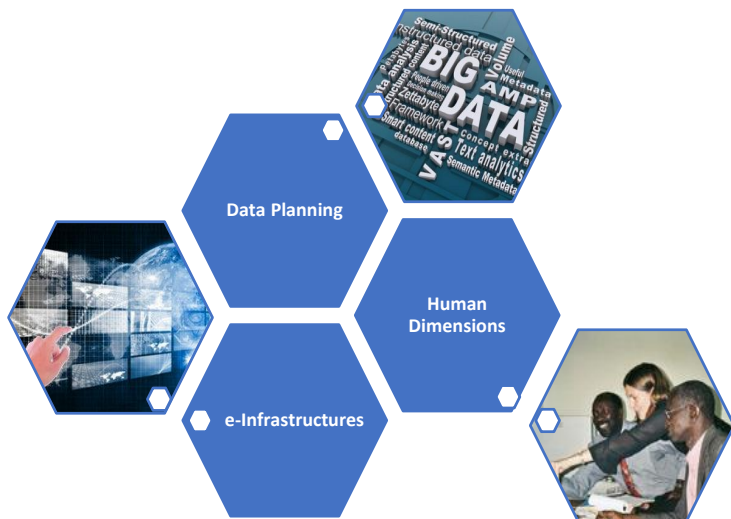
**The Belmont Forum adopts this data policy and the following principles to:**

- widen access to data and promote its long-term preservation in global change research;
- help improve data management and exploitation;
- coordinate and integrate disparate organizational and technical elements;
- fill critical global e-infrastructure gaps;
- share best practices; and
- foster new data literacy.

# PHASE 2: IMPLEMENTATION



# COORDINATION OFFICE (C3O)



**Action Theme 1 Lead:** NSF (USA)

**Co-leads:** JST (Japan), MoST (Taiwan)

**C3O staff:**

Barron Orr (Scientific Co-Lead, U of A)

Robert Samors (Coordination Officer)

Rowena Davis (Project Coordinator, U of A)

Tina Lee (current PI, U of A) P/T

Foster communication, collaboration, and coordination across the global change research community and with Belmont Forum projects and Secretariat

Seek synergies with ongoing data organization initiatives (GEO, CODATA, ICSU- WDS, OECD, RDA, Association of Commonwealth Universities

Continue to map the data and e-infrastructures landscape and develop Knowledge Hub

Update Implementation Plan (March 2017)

# DATA PLANNING

Develop Data Management language for future CRAs using existing best practice (BF Secretariat/Exemplars, Oct 2016)

Establish mechanisms for regular review and monitoring of EDP accomplishments and effectiveness, and to share best practice (GEO/CODATA/RDA/WDS/Exemplars, Spring 2017)

Map existing best practice by BF members, via BF Secretariat (Autumn 2017)

Establish Security Advisory Board (RDA) (Spring 2017)

Establish Data Policy Advisory Board (CODATA/WDS) (Spring 2017)

Establish Publishing Liaison Board (RDA/CODATA/ICSU/SCMA/COPDESS) (Autumn 2017)

Develop methods for certifying openness (CODATA/WDS) (Autumn 2017)



**Action Theme 2 Leads:** NSF (USA), JST (Japan), NERC (UK)

**Staff:**

- Mark Thorley (NERC) P/T
- Carrie Seltzer, Data Information Officer (NSF)

# E-INFRASTRUCTURES EXEMPLARS

Conduct workshop on interdisciplinary use-cases re: barriers to open data sharing (Paris, Nov 2016)

Provide foundation for CRA calls (2017 onwards) to show best practice and address problems, with annual evaluation of progress

Inform metrics and reporting requirements for CRAs (Spring 2017)

Inform data and e-Infrastructures policy with case-proven best practices (Winter 2017)



**Action Theme 3 Leads:** ANR (France), JST (Japan), European Commission, MoST (Taiwan)

**Staff:**

- Mark Asch (U Picardie, Fr) P/T
- Jean-Pierre Vilotte (IGP, France) P/T

# CAPACITY BUILDING

List recommended training activities relevant to data intensive global change research (continuing)

Clarify intended training targets and needs: Survey and skills gap analysis, liaise with CODATA/WDS/GEO/RDA, others (February 2017)

- Attend BF member training events as suggested (continuing)
- Hold curricula scoping workshop, EGU (April 2017)
- Investigate 'Belmont Certification' (Summer 2017)
- Present finalized curricula and recommendations (Autumn 2017)
- Decision at 2017 Meeting of Principals on path forward for BF capacity building



**Action Theme 4 Lead:**  
NERC UK

**Staff:**  
• Vicky Lucas (IEA, UK)  
P/T

# The purpose of this workshop is to explore common ground between publishers and funders on open data

Publishers have common interests with Belmont Forum agencies for open data: open data are important for research excellence and wide acceptance of results and increasing impact and reproducibility.

It is important that open data practices acceptable to the scientific community and to publishers be adopted by both communities.

It is much preferable that there is one set of open data principles and practice understood and adopted between funders and publishers and supported by institutions such as universities.

- Are the Belmont Forum principles fit for this purpose?
- What else is needed by publishers of the Belmont Forum agencies?
- How should publishers and agencies work together to put common open data policies into practice?