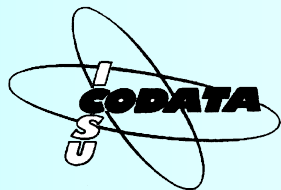


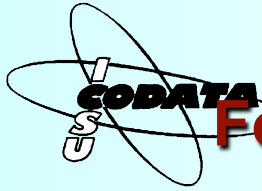
THE NATIONAL ACADEMIES

*Advisers to the Nation on Science, Engineering, and Medicine*



***U.S. – China Roundtable on  
Scientific Data Cooperation  
and  
Joint Study on Improving Scientific Data Sharing***  
***Presentation for Chinese American Networking Symposium  
Beijing, December 2009***

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## **Focus of this Presentation and Acknowledgements**

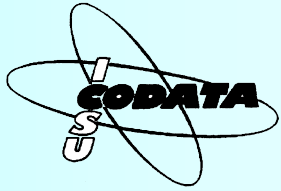
- ❖ **Provide background and overview of the Roundtable**
- ❖ **Describe focus and purpose of joint scientific data study**
- ❖ **Solicit input, coordination, and cooperation from CANS**

### **Acknowledgements:**

**Roundtable Co-chairs: GUO Huadong, CEODE/CAS, and Roberta Balstad, Columbia University**

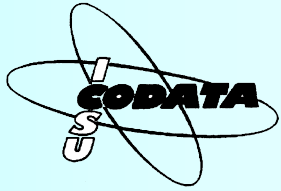
**Project Director on Chinese side; LI Jianhui, CNIC/CAS and Chinese CODATA**

**Staff on U.S. side: Subhash Kuvelker, BRDI/NAS, and US CODATA**



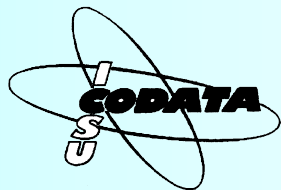
## **Justification for the Bilateral Roundtable**

- ❖ **Research increasingly data driven, and there are significant opportunities and challenges in data policy, management, and applications.**
- ❖ **Mutual benefits of cooperation for China and the U.S.**
- ❖ **No existing mechanism for bilateral cooperation in scientific data activities, policies, and practices.**
- ❖ **Both countries have extensive and important publicly-funded scientific database activities in many areas.**
- ❖ **National CODATA committees and Science Academies provide substantial focused expertise.**



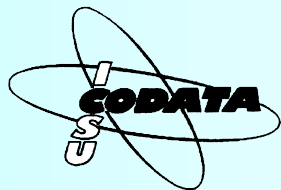
## History of Bilateral CODATA Cooperation

- ❖ Six meetings March 2000 - December 2004, three in Washington and three in Beijing, focused on developing China Scientific Data Sharing Program at MOST.
- ❖ Major workshop in 2004 and subsequent report on *Strategies for Preservation and Open Access of Scientific Data in China*, freely available at [www.nap.edu](http://www.nap.edu)
- ❖ Meetings demonstrated the desirability and feasibility of holding such discussions through a sustained forum
- ❖ Information on meetings available at: [www.nas.edu/brdi](http://www.nas.edu/brdi)



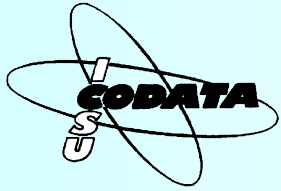
## **Purpose of the Roundtable (1)**

- 1. Provide a unique bilateral forum for government, academic, and private-sector stakeholders in the United States and China to discuss and address scientific data practices and policies.**
- 2. Serve as a catalyst and coordinating body for bilateral cooperation on scientific data practices and policies at the Academy and national level in each country, with appropriate recognition and representation of other thematically related bilateral and international activities.**



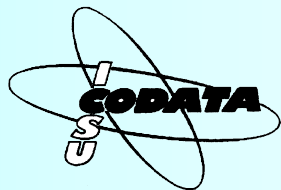
## **Purpose of the Roundtable (2)**

- 3. Exchange information and identify issues concerning scientific data activities, policies, and developments in intellectual property law and public information policies, including barriers to data exchange at the national and international levels, which may have implications for database development, access, sharing, and use.**
  
- 4. Identify scientific data and information resources that might be translated and made more widely available in our respective countries.**



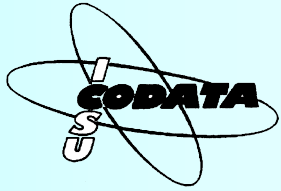
## **Purpose of the Roundtable (3)**

- 5. Identify mutual high-priority databases in both countries that should have either mirror sites, or subsets of the contents established in each other's country, and determine how to implement that.**
  
- 6. Promote opportunities for both senior and junior scientists and engineers to visit each other's countries for various periods of time to learn about each other's scientific database activities and to engage in cooperative research in select areas.**



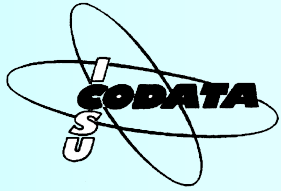
## **Purpose of the Roundtable (4)**

- 7. Explore the possibility for joint projects in scientific database development, studies, or training, including topics such as common standards and interoperable systems and techniques; metadata management practices; clearinghouses and portals for data resources; and other topics by mutual agreement.**



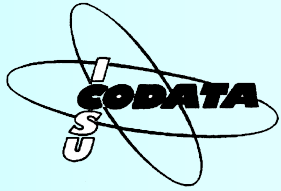
## **Subject-Matter Focus Areas**

- ❖ **Health and biomedical data**
- ❖ **Environmental and geospatial data**
- ❖ **Scientific data policy**
- ❖ **Advanced cyberinfrastructure data applications**



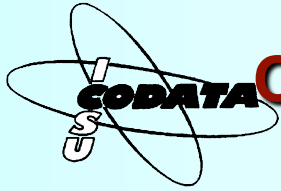
## **Structure of the Roundtable**

- ❖ **Organized under the auspices of the two Academies and their CODATA Committees**
- ❖ **Steering Committee with 2 co-chairs and ~4-6 members from each side**
- ❖ **Small Executive Committee to actively coordinate the work of the Roundtable on mutually agreed basis**
- ❖ **Additional *ex officio* members from other related bilateral research activities and programs**



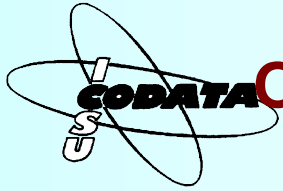
## **Roundtable Activities**

- ❖ **Hold one two-day meeting approximately once per year for an initial five-year period**
- ❖ **Core two-day meeting supplemented by additional site visits and side meetings**
- ❖ **Exchange and dissemination of information**
- ❖ **Additional workshops, symposia, studies (e.g., *Symposium on Common-Use Licensing of Publicly-funded Scientific Data and Information, Beijing 2009; planned joint study*)**
- ❖ **Review after first three years of operation, at 4<sup>th</sup> meeting in Irvine, California, 29-30 March 2010**



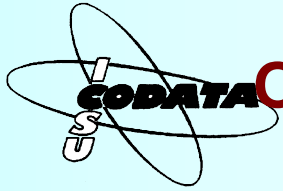
## **Overview of Joint Study on Improving Scientific Data Sharing -- Background**

- ❖ **Purpose:** conduct a study of the various kinds of barriers to cooperation in scientific data activities at both the national level and bilaterally between the institutions and individual researchers in the United States and the People's Republic of China, and make recommendations to help eliminate or minimize the impact of such barriers.
- ❖ **Cooperating organizations:** the National Academy of Science's Board on Research Data and Information, which also serves as the U.S. National Committee for CODATA, and the Chinese Academy of Sciences and its National CODATA Committee.
- ❖ **Period of performance:** one and a half years, beginning June 1, 2010.
- ❖ **Product:** a written report will be published in both the U.S. and China at the conclusion of the study and actively disseminated within each country's relevant research and policy communities.



## **Overview of Joint Study on Improving Scientific Data Sharing – Statement of Task**

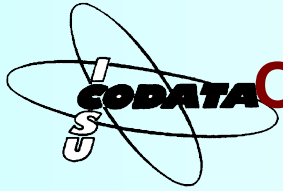
- 1. Identify areas of joint research in the earth and environmental, and the health and biomedical areas, that are particularly data intensive and would benefit from greater exchange and sharing of data. Describe why this would be important.**
- 2. Characterize and analyze the barriers to data sharing or exchange based on scientific and technical; institutional and management; economic and financial; legal and policy; and normative and socio-cultural aspects. Identify those barriers that are based on legitimate countervailing concerns and those that are candidates for reduction or elimination.**
- 3. Provide conclusions and recommendations for consideration by both countries to overcome the excessive or unnecessary barriers and to improve data sharing, both nationally and internationally, in light of the findings under tasks 1 and 2 above.**



## Overview of Joint Study on Improving Scientific Data Sharing – Issues and Barriers (1)

### ❖ Scientific and Technical

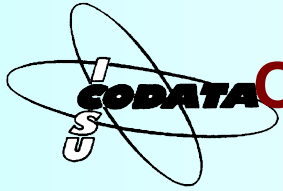
- Scientific collection methods and uses of data differ: e.g., observational vs. experimental; physical vs. biological; human subjects; real-time or retrospective, single event or longitudinal, geospatially referenced or not, high or low resolution, interdisciplinary or single discipline, quality control, documentation
- Technical: e.g., interoperability of formats, scales, hardware and software compatibilities, semantic issues, data infrastructure capabilities



## Overview of Joint Study on Improving Scientific Data Sharing – Issues and Barriers (2)

### ❖ Institutional and Management

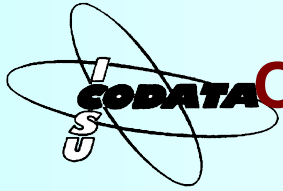
- Institutional: e.g., research funder requirements and research institution practices for data management and use, public-private partnerships or public-sector only, centralized or decentralized.
- Management: e.g., differences in data life-cycle management for large and small data sets, archiving practices, level of expertise available or needed



## Overview of Joint Study on Improving Scientific Data Sharing – Issues and Barriers (3)

### ❖ Economic and Financial

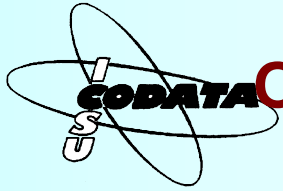
- Economic: e.g., national (local) and international benefits/drawbacks for open data access and sharing, competition vs. cooperation, commercialization opportunities and pressures; externalities and network effects (narrow or broad user base)
- Financial: e.g., sustainability of data activities; models for funding support; cost recovery requirements; unfunded mandates.



## Overview of Joint Study on Improving Scientific Data Sharing – Issues and Barriers (4)

### ❖ Legal and Policy

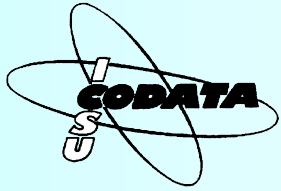
- Legal: e.g., national and international restrictions based on intellectual property, national security and export control, privacy, confidentiality, and liability laws and regulations; use of restrictive and permissive licenses, contracts, agreements at individual, institutional, and national levels
- Policy: e.g., overarching science policy at national level, international executive agreements, research funding agency policies for data access and use



## Overview of Joint Study on Improving Scientific Data Sharing – Issues and Barriers (5)

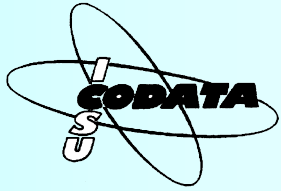
### ❖ Normative and Socio-cultural

- Scientific: different data management and use traditions, values, and attitudes in different disciplines, and related reputational benefits for data activities
- National: different data management and use traditions based on underlying social and political traditions and values, existence of reward structures for data work and cooperation, and language barriers



## **Suggestions for Cooperation**

- ❖ **Cooperation between the U.S. – China Roundtable on Scientific Data Cooperation and the Chinese American Networking Symposium could be mutually beneficial.**
- ❖ **Potential informal cooperation at personal or institutional levels, with participation in meetings or launching of new cooperative projects (e.g., research data applications of advanced cyberinfrastructure capabilities).**
- ❖ **Potential formal cooperation between two activities, including web links, specific exchange of information, joint working groups or meetings.**
- ❖ **Possible designation of reciprocal *ex officio* members in both China and the U.S.**



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# Thank You!

**To share ideas or get information, please contact:**

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**LI Jianhui: [lijh@sdb.cnic.cn](mailto:lijh@sdb.cnic.cn)**