International Digital Curation Conference 2014
San Francisco, USA
Wednesday 26 February 2014

Fundamental Constants

Thoughts on data challenges for international science and the role of CODATA

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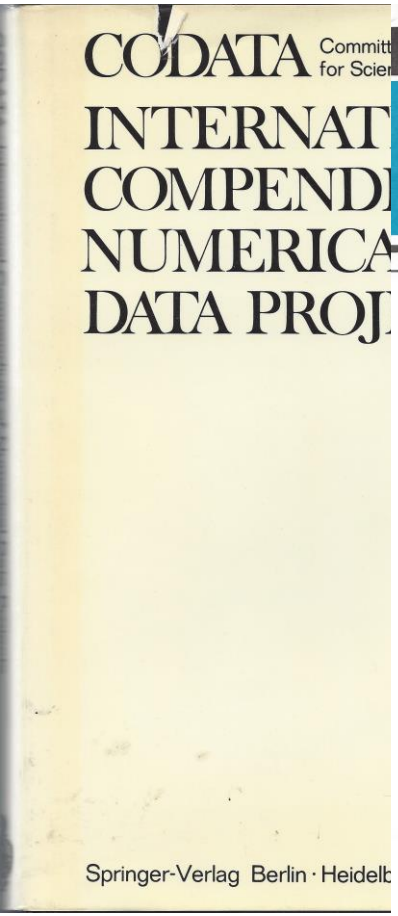
By the early a number of scientific leaders began to realize that this deluge of data was swamping the traditional publication and retrieval mechanisms, and that there was a danger that much of it would be lost to future generations. When several of these leaders got together and agreed that an organized international effort was needed to improve the management and preservation of scientific data and to facilitate coordination among interested groups throughout the world, was the outcome.

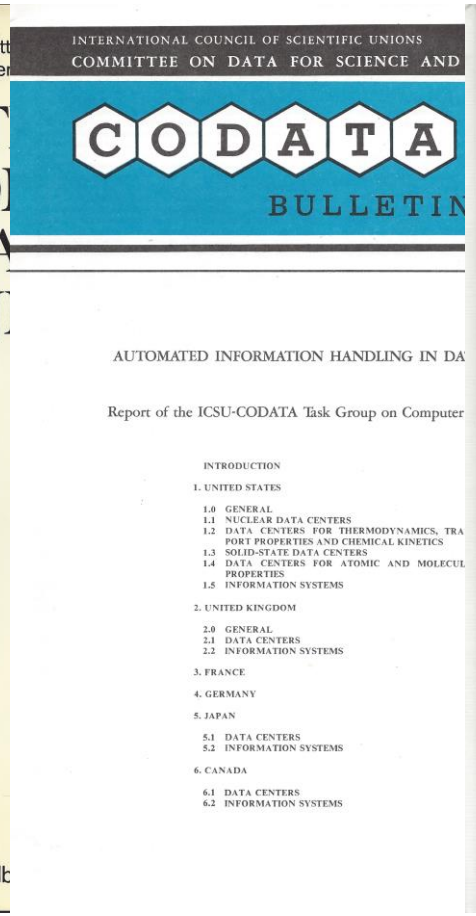
CODATA History and Mission

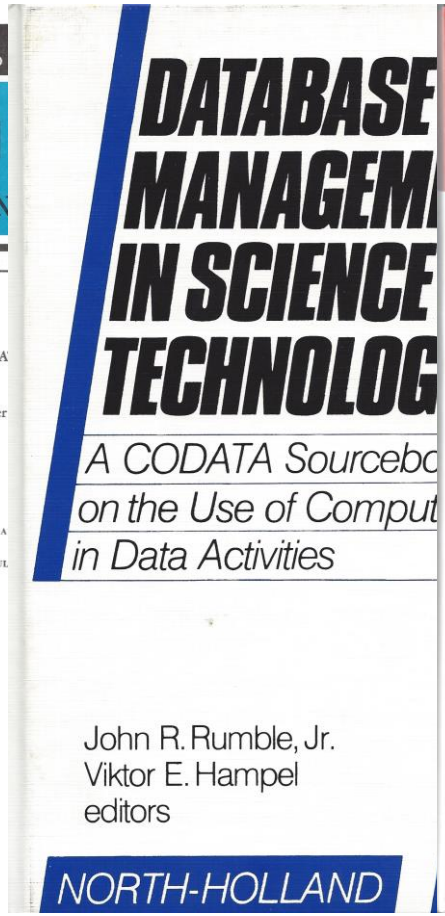
By the early **1960s** a number of scientific leaders began to realize that this deluge of data was swamping the traditional publication and retrieval mechanisms, and that there was a danger that much of it would be lost to future generations. When several of these leaders got together and agreed that an organized international effort was needed to improve the management and preservation of scientific data and to facilitate coordination among interested groups throughout the world, **the creation of CODATA was the outcome.**

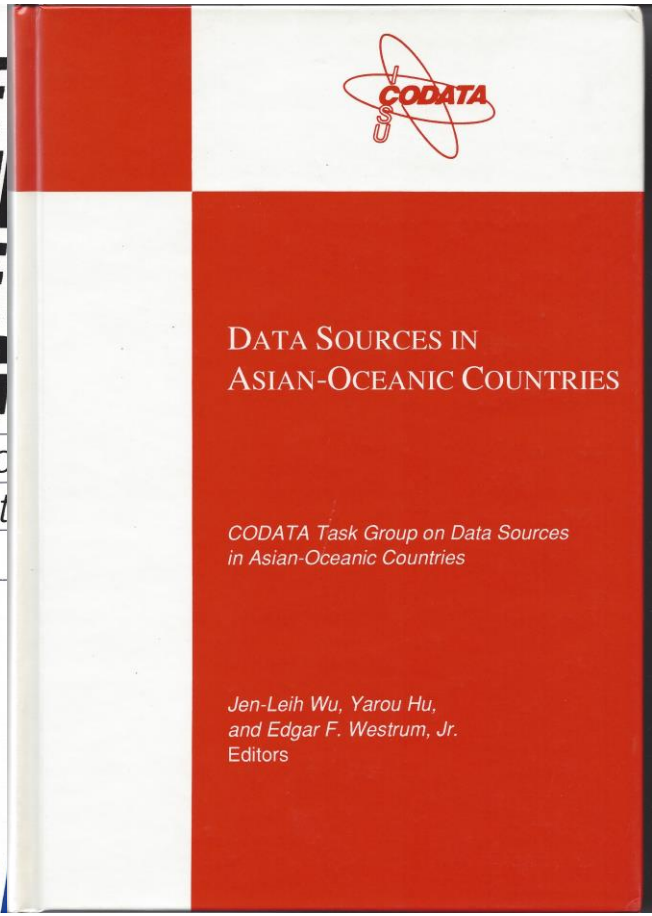
CODATA @ 45 Years: the story of the ICSU Committee on Data for Science and Technology

CODATA History and Mission









- To encourage, coordinate and provide guidance for activities in data compilation.
- To ascertain on a worldwide basis … what work on critical compilation of evaluated data is being carried out in each country.

CODATA History and Mission

Rossini's Vision: 'an "array of World Centers of Numerical Data for Science and Technology, covering each area of science, and appropriately tying in with the Central Office of CODATA as a hub." The CODATA Central Office could become a repository for one set of all the data, or, at the very least, maintain a central directory of the holdings of all the centers, so that it could refer scientists to the center that would meet their needs. Another model, in his mind, was to have the Central Office process orders for data sets and direct the appropriate center to make the shipments.'

CODATA History and Mission

CODATA's Reality: 'The reality was that CODATA lacked the financial resources and the authority to set up and operate such an ambitious network. What it did have was the ability to draw on the volunteer efforts of scientists who were committed to the goal of preparing the most reliable data sets possible. **Thus it developed a program of action that facilitated the work of these scientists by providing a focal point for cooperative efforts and for information exchange, with the object of leveraging its limited financial and managerial resources to achieve maximum benefit.**'

Fundamental Physical Constants

BIPM – purpose

www.bipm.org/extra/codata/remit.html

BIPM
Bureau International des Poids et Mesures

New search facility:
BIPM metrology portal

BIPM Home | Site map | Metrology portal | KCDB | JCTLM-DB | Contact us

> You are here: CODATA TGFC > purpose

Role of the CODATA Task Group on Fundamental Constants

Summary

- Role of the CODATA Task Group on Fundamental Constants
- Members of the CODATA Task Group on Fundamental Constants
- CODATA internationally recommended values of the Fundamental Physical Constants
- Paper on the 2010 LSA

Open access

- **CODATA TGFC** documents

Restricted access

- **CODATA TGFC** working documents

Direct access

- USEFUL LINKS
- ACRONYMS
- CIPM MRA
- KCDB
- BIPM STAFF DIRECTORY
- CC DIRECTORY
- MEETINGS
- THE TIME
- FUNDAMENTAL PHYSICAL CONSTANTS

The Task Group on Fundamental Constants is one of the original Task Groups of CODATA and was established in 1969. The purpose of the CODATA Task Group on Fundamental Constants is "to periodically provide the scientific and technological communities with a self-consistent set of internationally recommended values of the basic constants and conversion factors of physics and chemistry based on all of the relevant data available at a given point in time."

For more general information about CODATA please visit the following URL:

http://www.codata.org/

For more administrative information on the CODATA Task Group on Fundamental Constants please visit the following URL:

http://www.codata.org/taskgroups/TGfundconst/

The primary output of the Task Group on Fundamental Constants is the multivariate least squares adjustment (LSA) of the values of the fundamental constants of nature. At the present time we are intending to produce a new LSA on a four year cycle. Each cycle includes all experimental data that are published or accepted by the Task Group by December 31 of that year. The most recent adjustment was completed in 2011 with data accepted up to December 31, 2010 and it is known as the 2010 LSA. The values and uncertainties of the 2010 LSA of the fundamental constants may be found at:

http://physics.nist.gov/constants

Also available on this URL are a downloadable pdf copy of the 2010 LSA ( ) published in *Reviews of Modern Physics* and *J. Phys. Chem. Ref. Data*, background information related to fundamental constants, an extensive bibliography of publications pertaining to fundamental constants, and links to other related sources of information.

Enquires about the Task Group on Fundamental Constants can be addressed to:

Dr David Newell
NIST
Bldg. 220, Rm. B158
100 Bureau Drive, Stop 8171
Gaithersburg, MD 20899
UNITES STATES

Telephone: +1 301 975 4228
Fax: +1 301 975 2115
Email:

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Fundamental Constants

2010 CODATA RECOMMENDED VALUES OF THE FUNDAMENTAL CONSTANTS OF PHYSICS AND CHEMISTRY NIST SP 959 (Dec 2012)

Values from: P. J. Mohr, B. N. Taylor, and D. B. Newell, *Rev. Mod. Phys.* **84**, 1527 (2012) and *J. Phys. Chem. Ref. Data* **41**, 043109 (2012). The number in parentheses is the one-sigma (1 σ) uncertainty in the last two digits of the given value.

Quantity	Symbol	Numerical value	Unit
speed of light in vacuum	c, c_0	299 792 458 (exact)	$\mathrm{m\ s^{-1}}$
magnetic constant	μ_0	$4\pi \times 10^{-7}$ (exact)	$\mathrm{N\ A^{-2}}$
electric constant $1/\mu_0 c^2$	ϵ_0	$8.854\,187\,817... \times 10^{-12}$	$\mathrm{F\ m^{-1}}$
Newtonian constant of gravitation	G	$6.673\,84(80) \times 10^{-11}$	$\mathrm{m^3\ kg^{-1}\ s^{-2}}$
Planck constant	h	$6.626\,069\,57(29) \times 10^{-34}$	J s
$h/2\pi$	$\hbar$	$1.054\,571\,726(47) \times 10^{-34}$	J s
elementary charge	e	$1.602\,176\,565(35) \times 10^{-19}$	C
fine-structure constant $e^2/4\pi\epsilon_0\hbar c$	α	$7.297\,352\,5698(24) \times 10^{-3}$	
inverse fine-structure constant	α^{-1}	137.035 999 074(44)	
Rydberg constant $\alpha^2 m_e c/2h$	R_∞	10 973 731.568 539(55)	$\mathrm{m^{-1}}$
Bohr radius $\alpha/4\pi R_\infty$	a_0	$0.529\,177\,210\,92(17) \times 10^{-10}$	m
Bohr magneton $e\hbar/2m_e$	μ_B	$927.400\,968(20) \times 10^{-26}$	$\mathrm{J\ T^{-1}}$

Fundamental Constants

Quantity	Symbol	Numerical value	Unit
electron mass	m_e	$9.109\,382\,91(40) \times 10^{-31}$	kg
proton mass	m_p	$1.672\,621\,777(74) \times 10^{-27}$	kg
proton-electron mass ratio	m_p/m_e	$1836.152\,672\,45(75)$	
Avogadro constant	N_A, L	$6.022\,141\,29(27) \times 10^{23}$	mol^{-1}
Faraday constant $N_A e$	F	$96\,485.3365(21)$	$\mathrm{C\ mol}^{-1}$
molar gas constant	R	$8.314\,4621(75)$	$\mathrm{J\ mol}^{-1}\ \mathrm{K}^{-1}$
Boltzmann constant R/N_A	k	$1.380\,6488(13) \times 10^{-23}$	$\mathrm{J\ K}^{-1}$
Stefan-Boltzmann const. $\pi^2 k^4/60\hbar^3 c^2$	σ	$5.670\,373(21) \times 10^{-8}$	$\mathrm{W\ m}^{-2}\ \mathrm{K}^{-4}$
magnetic flux quantum $h/2e$	Φ_0	$2.067\,833\,758(46) \times 10^{-15}$	Wb
Josephson constant $2e/h$	K_J	$483\,597.870(11) \times 10^{9}$	$\mathrm{Hz\ V}^{-1}$
von Klitzing constant h/e^2	R_K	$25\,812.807\,4434(84)$	Ω
electron volt (e/C) J	eV	$1.602\,176\,565(35) \times 10^{-19}$	J
(unified) atomic mass unit $\frac{1}{12}m(^{12}\mathrm{C})$	u	$1.660\,538\,921(73) \times 10^{-27}$	kg

A more extensive listing of constants is available in the references given above and on the NIST Physical Measurement Laboratory Web site: physics.nist.gov/constants.

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

Fundamental Physical Constants

REVIEWS OF MODERN PHYSICS, VOLUME 84, OCTOBER–DECEMBER 2012

CODATA recommended values of the fundamental physical constants: 2010*

Peter J. Mohr,† Barry N. Taylor,‡ and David B. Newell§

National Institute of Standards and Technology, Gaithersburg, Maryland 20899-8420, USA

(published 13 November 2012)

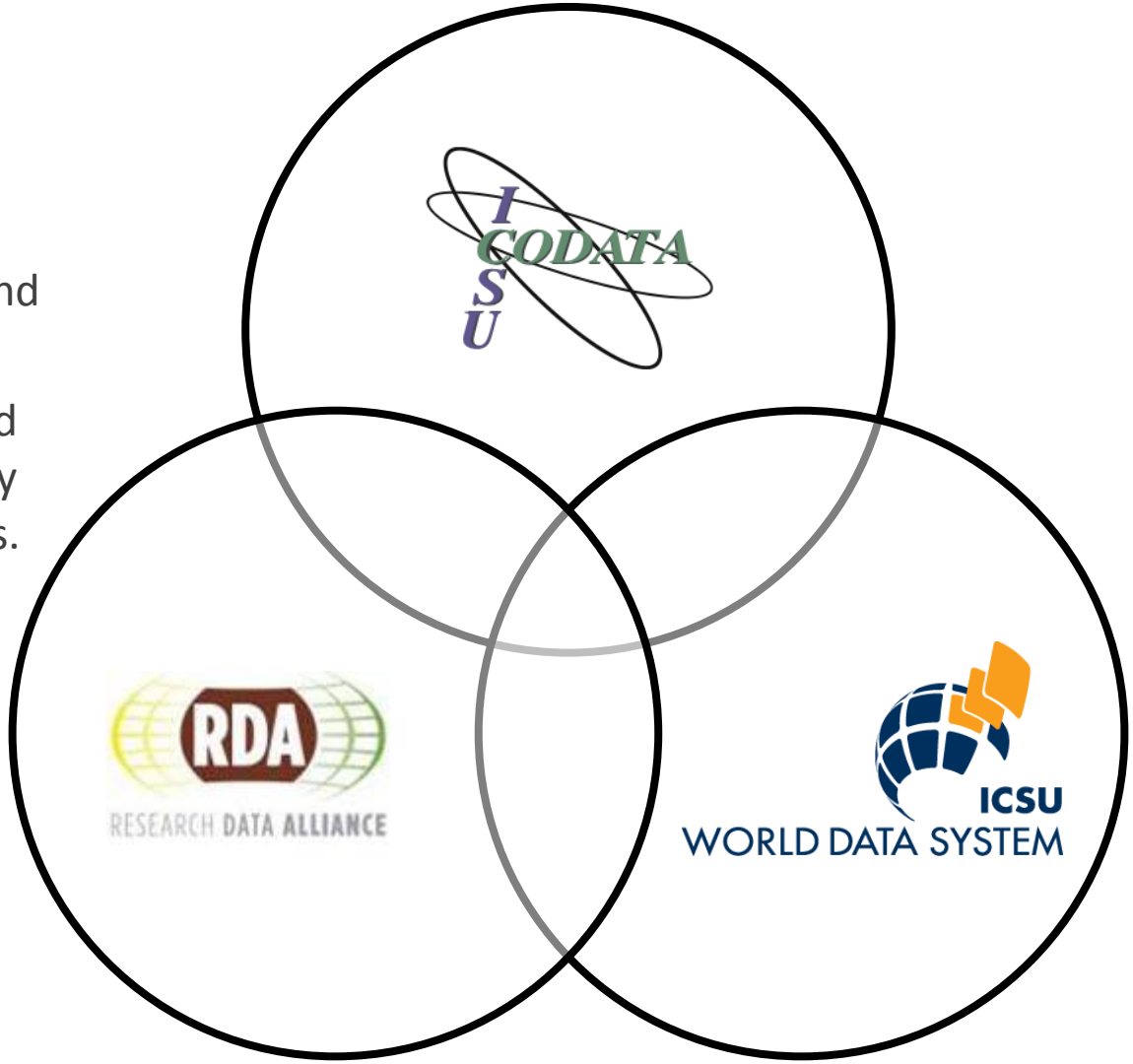
This paper gives the 2010 self-consistent set of values of the basic constants and conversion factors of physics and chemistry recommended by the Committee on Data for Science and Technology (CODATA) for international use. The 2010 adjustment takes into account the data considered in the 2006 adjustment as well as the data that became available from 1 January 2007, after the closing date of that adjustment, until 31 December 2010, the closing date of the new adjustment. Further, it describes in detail the adjustment of the values of the constants, including the selection of the final set of input data based on the results of least-squares analyses. The 2010 set replaces the previously recommended 2006 CODATA set and may also be found on the World Wide Web at physics.nist.gov/constants.

DOI: 10.1103/RevModPhys.84.1527 PACS numbers: 06.20.Jr, 12.20.−m

International Research Data Collaboration Ecosystem

CODATA

- Data policies
- National and international coordination and collaboration.
- Disciplinary and interdisciplinary data challenges.
- International Scientific Programmes.



Distinctive Features of CODATA

ICSU
International Council for Science

ICSU's Mission → **CODATA's Mission**

"Strengthen international science for the benefit of society ***by promoting improved scientific and technical data management and use****."*

Data Policies

OECD Principles and Guidelines for Access to Research Data from Public Funding

http://bit.ly/oecd_principles

Publicly funded research data are a public good, produced in the public interest, which should be made openly available with as few restrictions as possible in a timely and responsible manner that does not harm intellectual property. **RCUK Principles**

Data Policies

GROUP ON EARTH OBSERVATIONS

Data Sharing Principles
Data Sharing Working Group

CODATA asked to lead task of implementing Data Sharing Principles, from 2006.
GEO Data Sharing Principles: http://bit.ly/GEO_DSPs
CODATA and GEO DSWG: http://bit.ly/CODATA_GEO_DSWG

White Paper for Implementation of GEO DSPs, creation of GEO Data-CORE, *Toward Implementation of the Global Earth Observation System of Systems Data Sharing Principles*
https://www.jstage.jst.go.jp/article/dsj/8/0/8_35JSL201/_pdf

Sub-groups on:
1. Implementation;
2. legal interoperability and licensing;
3. data quality and documentation;
4. capacity building and promoting data sharing.

CODATA-ICSTI Task Group
Data Citation, Standards and Practices

For Attribution
Workshop and Report:
http://bit.ly/for_attribution

Out of Cite, Out of Mind

http://bit.ly/out_of_cite

Data Citation Principles Background and Developments:
http://bit.ly/data_citation_principles

Out of Cite, Out of Mind Principles

Core Principles for the citation of data: offered as guides to implementers.

1. **Status of Data:** Data citations should be accorded the same importance in the scholarly record as the citation of other objects.
2. **Attribution:** Citations should facilitate giving scholarly credit and legal attribution to all parties responsible for those data.
3. **Persistence:** Citations should be as durable as the cited objects.
4. **Access:** Citations should facilitate access to data by humans and by machines.
5. **Discovery:** Citations should support the discovery of data and their documentation.
6. **Provenance:** Citations should facilitate the establishment of provenance of data.
7. **Granularity:** Citations should support the finest grained description necessary to identify the data.
8. **Verifiability:** Citations should contain information sufficient to identify the data unambiguously.
9. **Metadata Standards:** Citations should employ widely accepted metadata standards.
10. **Flexibility:** Citation methods should be sufficiently flexible to accommodate the variant practices among communities.

Out of Cite, Out of Mind: http://bit.ly/out_of_cite

Data Citation Synthesis Group
Draft Declaration

'Sound, reproducible scholarship rests upon a foundation of robust, accessible data. For this to be so in practice as well as theory, data must be accorded due importance in the practice of scholarship and in the enduring scholarly record. In other words, data should be considered legitimate, citable products of research. Data citation, like the citation of other evidence and sources, is good research practice.

In support of this assertion, and to encourage good practice, we offer a set of guiding principles for data citation.

Draft Joint Declaration of Data Citation Principles: http://www.force11.org/datacitation

Workshop on Data Citation Principles, Thursday

PANGAEA®
Data Publisher for Earth & Environmental Science

Data Description

Citation: Irino, T; Tada, R (2009): Chemical and mineral compositions of sediments from ODP Site 127-797. doi:10.1594/PANGAEA.726855,
Supplement to: **Irino, Tomohisa; Tada, Ryuji (2000):** Quantification of aeolian dust (Kosa) contribution to the Japan Sea sediments and its variation during the last 200 ky. *Geochemical Journal*, **34(1)**, 59-93, http://www.terrapub.co.jp/journals/GJ/pdf/3401/34010059.pdf

When using this data, please cite the original article:

Hess LJT, Austin AT (2014) Pinus ponderosa alters nitrogen dynamics and diminishes the climate footprint in natural ecosystems of Patagonia. Journal of Ecology, online in advance of print. doi:10.1111/1365-2745.12228

Additionally, please cite the Dryad data package:

Hess LJT, Austin AT (2014) Data from: Pinus ponderosa alters nitrogen dynamics and diminishes the climate footprint in natural ecosystems of Patagonia. Dryad Digital Repository. doi:10.5061/dryad.gd905

Cite | Share

Download the data package citation in the following formats:

RIS *(compatible with EndNote, Reference Manager, ProCite, RefWorks)*

BibTex *(compatible with BibDesk, LaTeX)*

Building a Culture of Data Citation

http://www.ands.org.au/guides/data_citation_poster.pdf

Out of Cite, Out of Mind
Research Recommendations

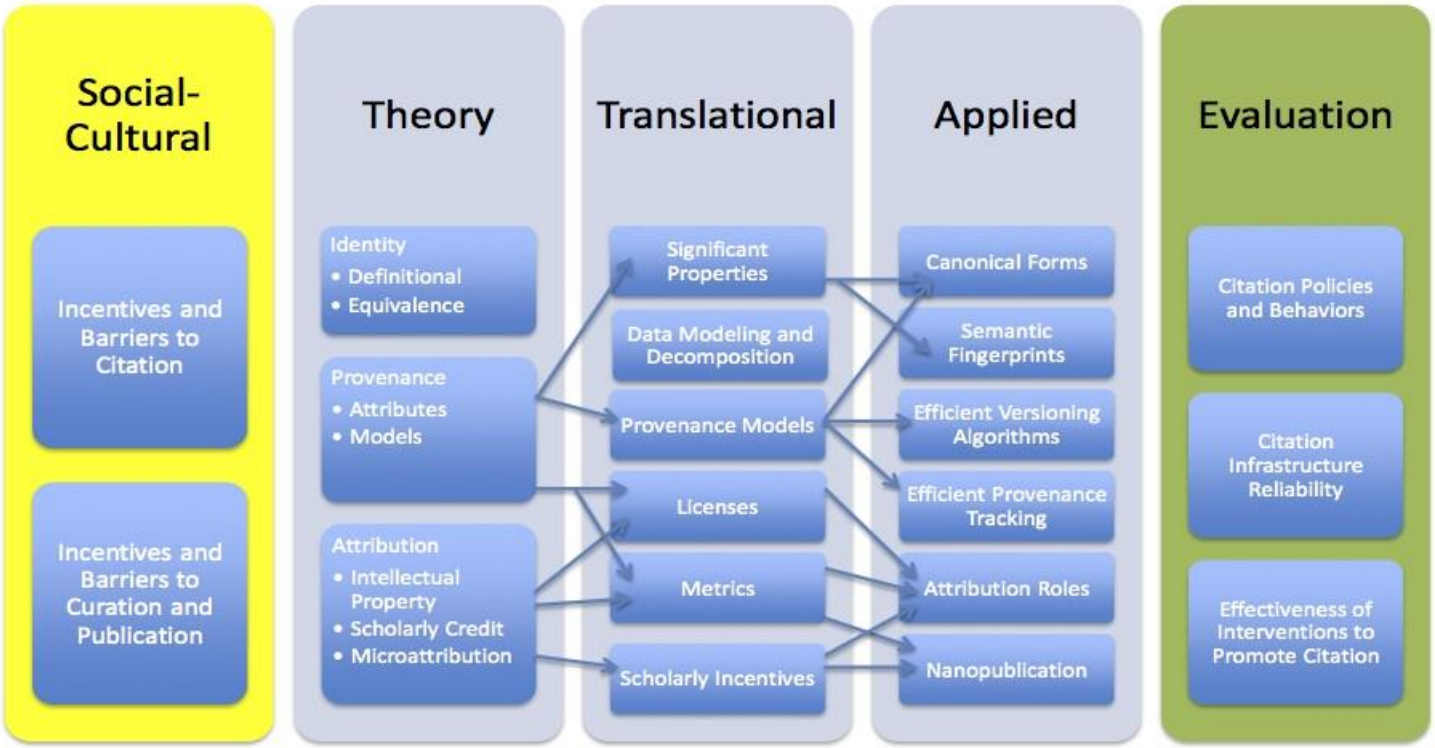


Figure 1. Research activities required to enable ubiquitous, seamless, and interoperable data citation

Activities to design, implement and understand the benefits of an 'infrastructure of data citation'

Data Citation:
From Principles to Practice

- RDA BOF towards a Data Citation Interest Group, 15.30-17.00, Thu 27 March, RDA Plenary
- **Campaign for data citation practice: RDA, Force 11, DataCite, CODATA etc?**
- CODATA can help make the case with International Scientific Unions, with learned societies and journal editorial boards to implement practice of data citation.
- ICSU Report on OA for literature, data and on metrics for the assessment of research contributions.
- Dryad Community Meeting, 28 May at SSP, Boston.

Helping you to find, access, and reuse data

CODATA Data Policy Committee: Vision

- Designed to help CODATA fulfill mission and lead on Data Policy Issues internationally.
- **Genuinely international and diverse in membership and perspective: c. 12 members from**
- **Advisory Body:** advise international programmes and other initiatives.
- **Agenda Setting:** position statements (short statements or white papers) on data policy issues.
- **Benefit CODATA members:** engage with National Committees and Unions where appropriate.
  - Promote greatest possible availability of data assets.
  - Engage in a process of validation and iteration with National CODATA Committees (and academies, funders, transnational bodies …), with International Scientific Unions (and Learned Societies, publishers, journal editorial boards ….).

Intra-National and International Cooperation

Intra-National and International Cooperation

F. Lagoutte, Paris

IMP. HENON - PARIS

Propriété de la R.A. des Transports Parisiens

CODATA: a global organisation

23 National Members in 2014

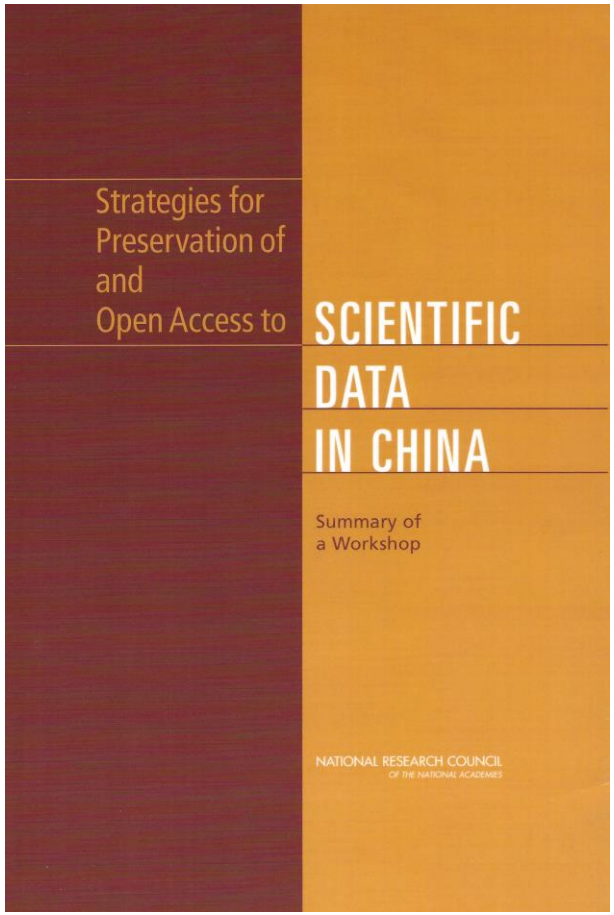
- AUSTRALIA
- BRAZIL
- CANADA
- CHINA: Chinese Academy of Sciences (CAS), China
- CHINA: Academia Sinica, Academy of Sciences located in Taipei, China
- CZECH REPUBLIC
- FINLAND
- FRANCE
- GEORGIA
- GERMANY *
- INDIA
- INDONESIA
- IRELAND
- ISRAEL
- JAPAN
- KOREA
- MONGOLIA
- POLAND
- RUSSIA
- SOUTH AFRICA
- UKRAINE
- UNITED KINGDOM
- UNITED STATES

CODATA National Committees

- CODATA Membership is largely national, so National Committees play an important role.
- **What are the benefits of having a CODATA National Committee?**
  - National forum and coordination (policy, standards, data issues, young researchers…)
  - Forum for national stakeholders (research funders, National Academies, research institutions, data centres, learned societies, research libraries, etc)
  - Engagement with CODATA International and other countries.
  - Network effect of collaboration, exchanges between National Committees
  - Strong and active national committees provide good examples for other countries.

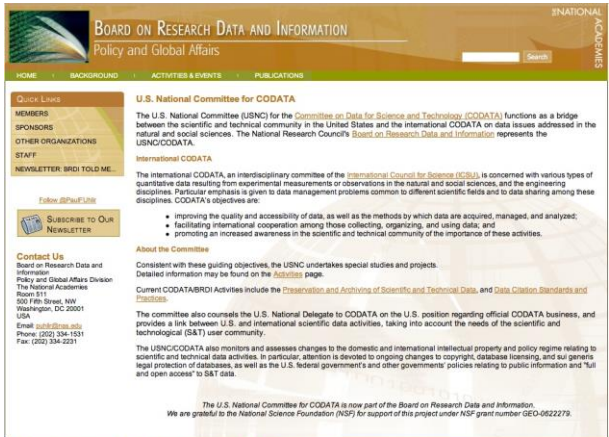
Strong CODATA National Committees

CODATA China:
http://www.codata.cn/en/enindex.asp



CODATA US-China Workshop, 2006

CODATA US under auspices of BRDI NAS:
http://sites.nationalacademies.org/pga/brdi/PGA_046807



CODATA Task Groups

TGs are approved for two-years by the CODATA GA; provided with seed funding; engagement and support of EC; benefit from community endorsement, linkages: http://www.codata.org/taskgroups/index.html

Call for 2014 Task Groups: http://bit.ly/CODATA-TG-CFP

Current TGs

1. **Advancing Informatics for Microbiology: recent workshop, Beijing**
2. Anthropometric Data and Engineering
3. **Data Citation Standards and Practices: recent internationally recognised report**
4. **Data at Risk: recent workshops, Marseille, France; and New Delhi, India.**
5. **Earth and Space Science Data Interoperability: activities at recent conference, Kaluga, Russia.**
6. Exchangeable Materials Data Representation to support Scientific Research and Education
7. **Fundamental Physical Constants: 2010 CODATA constants http://physics.nist.gov/cuu/Constants/bibliography.html**
8. Global Information Commons for Science Initiative
9. **Global Roads Data Development: activity at recent conference, Addis Ababa, Ethiopia.**
10. **Linked Open Data for Global Disaster Risk Research: recent workshop, Sanya.**
11. OCTOPUS: Mining Space and Terrestrial Data for Improved Weather, Climate and Agricultural Predictions
12. **Preservation of and Access to Scientific and Technical Data in/for/with Developing Countries: preparing workshop, Kenya 2014.**

CODATA Task Groups

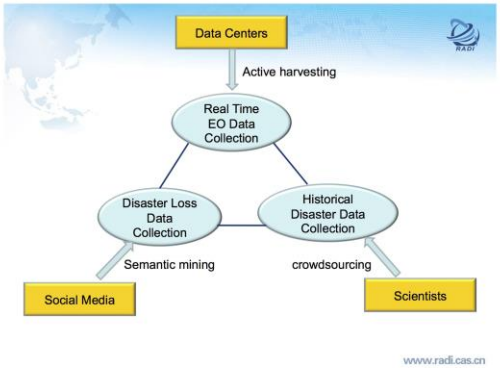
Advancing Informatics for Microbiology

Collaboration around interoperability and knowledge extraction issues; research and training workshops: http://bit.ly/aim-tg

Data at Risk

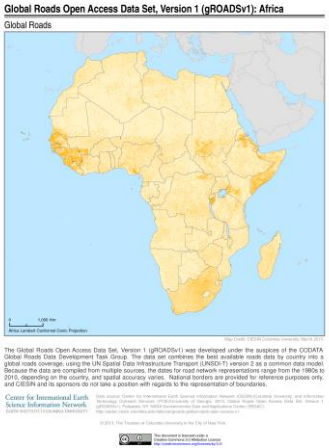
Developing 'Principle Guidelines for Data at Risk': http://bit.ly/DAR-guidelines

LOD Global Disaster Data



Preparing White Paper on Use of LOD for Disaster Data: http://bit.ly/lodgd

Global Roads



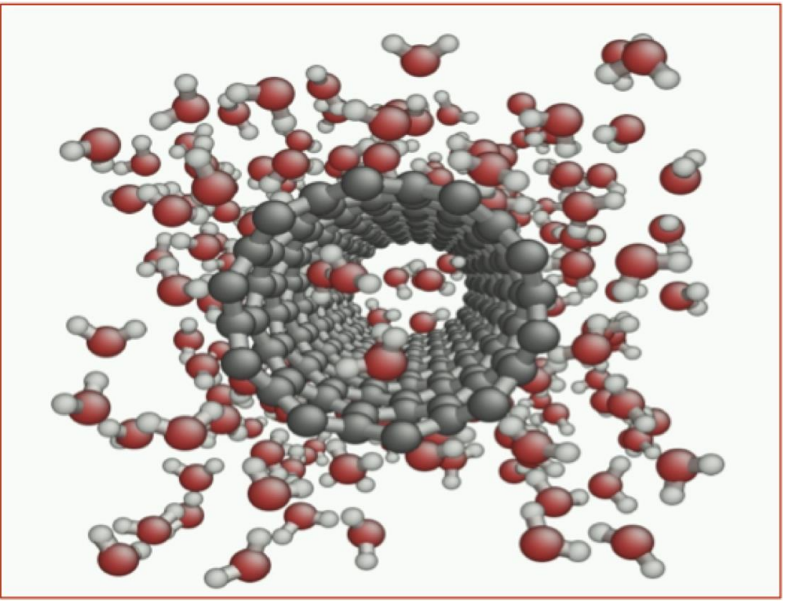
Review of Global Roads Data Development Methodologies: http://bit.ly/globalroads-methods

Data and Development

- **International Workshop on Open Data for Science and Sustainability in Developing Countries, Nairobi, Kenya, 4-8 August 2014: http://www.codata-pastd.org**
- Organised by longstanding PASTD Task Group.
- Communication and Information Committee, World Federation of Engineering Organization (WFEO-CIC), Ministry of Communication and Information of Kenya (MCIK) and UNESCO.
- Two-day training workshop for young scientists in good data management practice, 4-5 Aug.
- Main workshop, 6-8 Aug:
  - Promote long-term preservation, archiving, and open access to scientific and technical data with respect to sustainability goals and coordinating international research programmes such as Future Earth.
  - Develop and endorse a set of principles and guidelines for preservation of and open access to research data in developing counties.

CODATA WG on Description of Nanomaterials

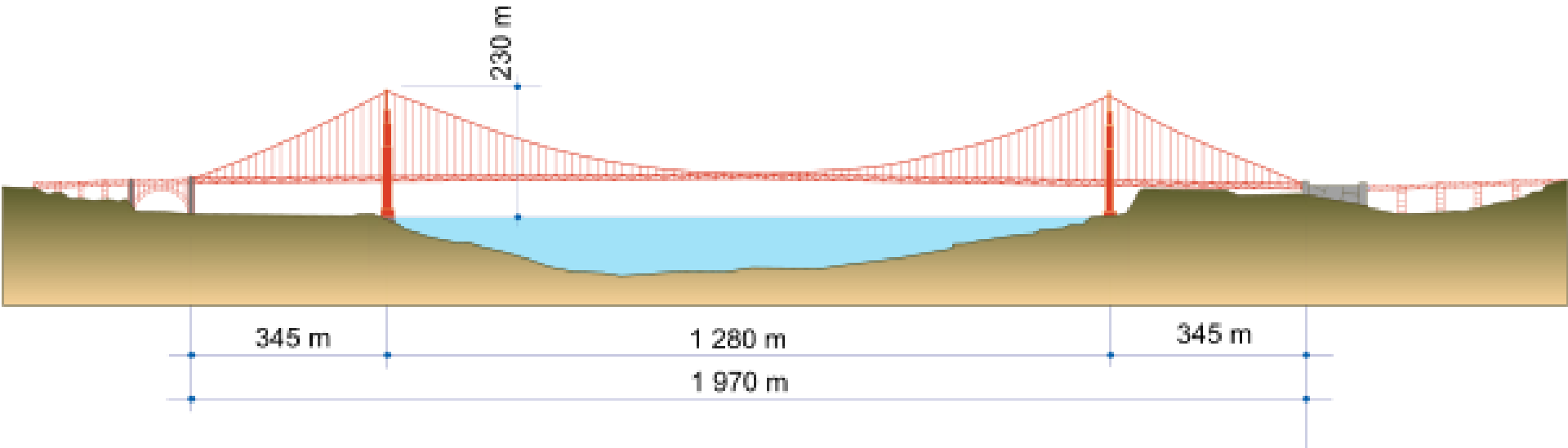
Convene ISUs, International Stakeholders and data experts → Form Working Group → Draft Framework for Description of Nanomaterials → Refine/validate in FP7 Future Nano Needs Project



CODATA-ICSU Workshop:
http://bit.ly/nanoWorkshop2012
CODATA WG on the Description of Nanomaterials:
http://bit.ly/codata_nanomaterials
Draft Uniform Description System:
http://bit.ly/nanoUDS
Future Nano Needs Project:
http://www.futurenanoneeds.eu/

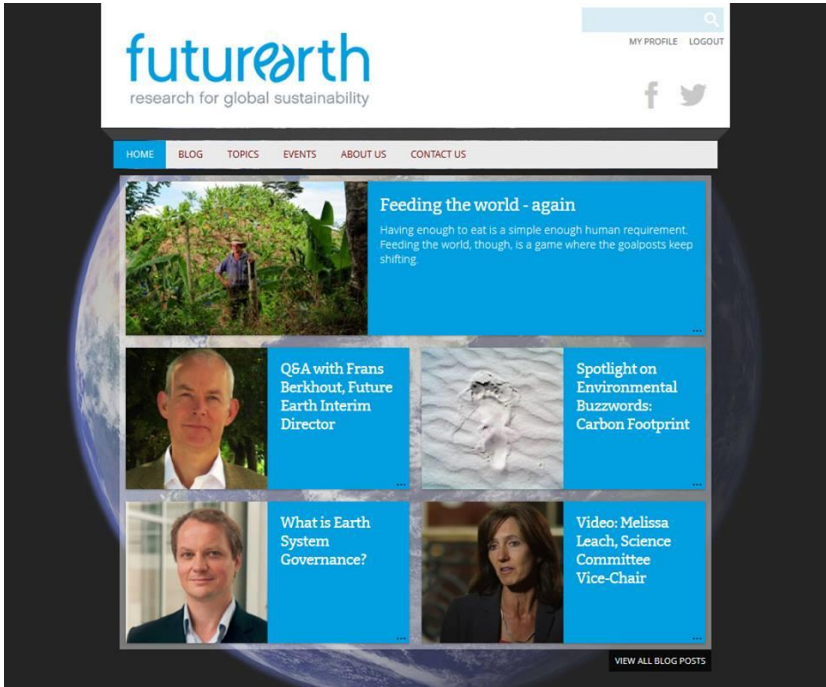
CODATA MO

- Leverage links with ICSU and ISUs; and with National Committees.
- Convenes researchers, data experts/scientists, standards bodies, international organisations.
- Task Groups or Working Groups develop frameworks, White Papers, authoritative and influential reports.
- Work with stakeholders to encourage uptake.



Future Earth

- Ten-year interdisciplinary research programme.
- Sponsored by ICSU, ISSC, Belmont Forum, UNESCO, UNEP.
- Incorporating a number of existing research initiatives.
- Attempt to meet calls for international, integrated, collaborative and solutions-oriented research to the urgent challenges of global environmental change and sustainable development.
- http://www.futureearth.info/



futurearth

research for global sustainability

ICSU CODATA

futurearth

research for global sustainability

- Augments earth system science with impacts of environmental change on people, adaptation and transformation
- Deliver interdisciplinary research on global environmental change for sustainable development
- Focus on interactions between social and environmental changes, at scale.
- Strengthen partnership between researchers/funders/users **(co-design)**

photos: www.dawide.com

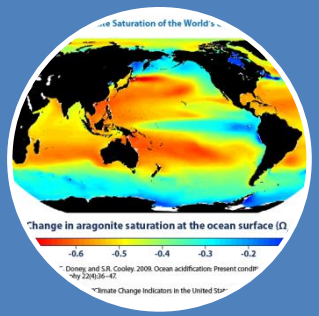
Future Earth Data Integration

Existing Data

open science

Existing Knowledge

New Observations



Models

Integrated and interdisciplinary datasets; indicators; visualizations; baselines, trends and projections; data and information for policy

Social science and development data; public sector information; EO, ESS, climate science, ecosystems, geophysical data;

Availability (access, regulations, ethics); heterogeneity (standards, units); interoperability; quality.

Data and Information for Policy

Provide the right data/information, in the right format, at the right time, to the right people, to make the right decisions.

Data Principles for Future Earth

- Data principles proposed by CODATA and WDS.
  1. **Excellence in Data Management:** data generated and modified in Future Earth, and associated research products—such as code—will be managed throughout the research lifecycle in accordance with good practice.
  2. **Openness and Protection:** data, and other research products, generated and modified in Future Earth will be made as openly available as possible, with minimum delay and at minimum cost, while respecting relevant international legal instruments, national policies and legislation for the protection of personal, sensitive and commercial data;
  3. **Integrity and Legacy:** data, and other research products, generated and modified in Future earth will be discoverable, accessible, intelligible and reusable, in the short and long term, and will therefore be selected appropriately, quality-assessed, furnished with appropriate metadata, machine readable licences, and maintained in trusted digital repositories.
- Included recommendation to use DCC's DMP Online.

futurearth
research for global sustainability

IRDR: Integrated Research on Disaster Risk

IRDR Research Objectives

- Characterisation of hazards, vulnerability and risk
- Understanding decision making in complex and changing risk contexts
- Reducing risk and curbing losses through knowledge-based actions

"To develop trans-disciplinary, multi-sectorial alliances for in-depth, practical disaster risk reduction research studies, and the implementation of effective evidence-based disaster risk policies and practices."

IRDR

IRDR Conference, Beijing, 7-9 June 2014

Disaster Loss Data (DATA)

- Multi stakeholder study of issues related to the collection, storage, and dissemination of disaster loss data'.
- Aim 'to establish an overall framework for disaster loss data'.
- **Challenge of access to data, standardisation, loss methodologies etc.**
- **Contribution of CODATA TG on LOD for Global Disaster Data**

CODATA Big Data Workshop
Beijing, June 2014

- CODATA to convene an international workshop on Big Data for Interdisciplinary, International Science Programmes
- Aim and Objectives
  - to create an international and cross-disciplinary **awareness** of the wide and diverse activities underway in the science-related Big Data sphere;
  - to establish and foster ongoing **coordination and collaboration** for international, interdisciplinary research programmes, such as IRDR and Future Earth, on Big Data issues;
  - to identify ways in which a **CODATA Working Group on Big Data for International Science** programmes can contribute.
- Address ethical, policy and legal issues as well as technical matters.
- Outcomes
  - Proceedings and high profile articles.
  - Position statement or white paper on Big Data for International Sciences Programmes.
- **Before or after IRDR Conference**

www.SciDataCon2014.org

New Delhi 2-5 Nov 2014

SciDataCon 2014

International Conference on
Data Sharing and Integration for Global Sustainability

ICSU WORLD DATA SYSTEM

Home | Scientific Programme | Abstract Submission | Registration | Venue | Contact | News

USGS/NASA Landsat

Welcome to SciDataCon 2014

Research data are essential to all scientific endeavours. The emerging cultures of data sharing and publication, open access to, and reuse of data are the positive signs of an evolving research environment. Nevertheless, several cultural and technological challenges are still preventing the research community from realizing the full benefits of these tendencies.

The Committee on Data for Science and Technology (CODATA) and the World Data System (WDS), interdisciplinary committees of the International Council for Science (ICSU) are supporting and encouraging these positive changes by actively promoting effective data policies and good data management practices in the research community, to produce better science, which ultimately benefits society. Likewise, the challenges and opportunities of 'Big Data' may have ramifications for the conduct of science and for the whole of society: the value and importance of data are being recognized more than ever before.

As a major contribution to this effort, the two organizations are co-sponsoring and organizing a high profile international biennial conference on scientific research data. SciDataCon will provide a unique platform bringing together international experts and practitioners in data sciences, technologies and management; researchers from the natural, social, health, and computer sciences; research funders and sponsors; and policy makers and advisors.

Get Involved!

Propose topics for sessions of the SciDataCon2014 Scientific Programme on our **Conference Forum!**

Useful Information

- About Delhi
- Accommodation
- Tours
- Visas
- Invitation Letter

SciDataCon2014

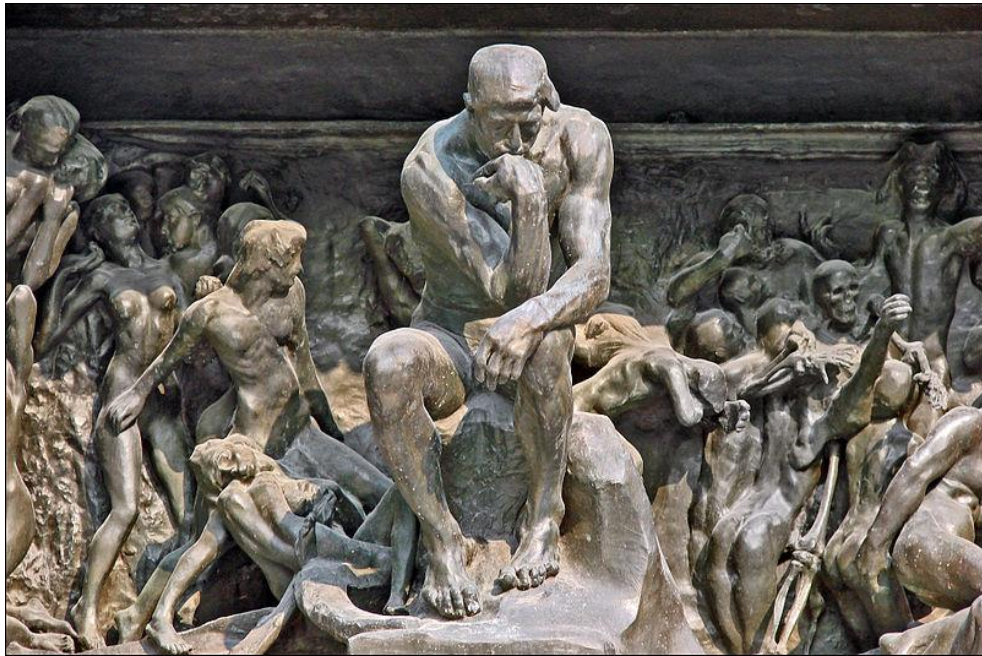
- **Data Sharing and Integration for Global Sustainability:** http://www.scidatacon2014.org
  1. Data sharing, integration and interoperability;
  2. Big Data science and engineering;
  3. Development and sustainability of data services;
  4. Scientific data for decision making and policy;
  5. International collaboration on research data.
- First call for abstracts and sessions will be early March: http://www.scidatacon2014.org/scientific-programme/programme-committee

SciDataCon 2014
International Conference on
Data Sharing and Integration for Global Sustainability

Opportunities to work with CODATA

- Collaborate on data policy, availability and quality issues.
- Promote collaboration between CODATA National Committees.
- Build bridges between data experts and specialist researchers to tackle data challenges.
- Tackle data issues in international science programmes.
- **Proposals for Task Groups, 30 April:** http://bit.ly/CODATA-TG-CFP

- Big Data for International Science Workshop, Beijing, June 2014.
- International Workshop on Open Data for Science and Sustainability in Developing Countries, Nairobi, Kenya, 4-8 August 2014: http://www.codata-pastd.org
- **Call for Abstracts early March: SciDataCon 2014, New Delhi, 2-5 November 2014: http://www.scidatacon2014.org**



Thank for your attention!

CODATA Blog: http://codata.org/blog/
SciDataCon 2014: http://www.scidatacon2014.org/
Call for Task Groups: http://bit.ly/CODATA-TG-CFP

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