International Council for Science (ICSU)

CODATA Newsletter 101

Committee on Data for Science and Technology

Integrated Research on Disaster Risk (IRDR)

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CONTENT :

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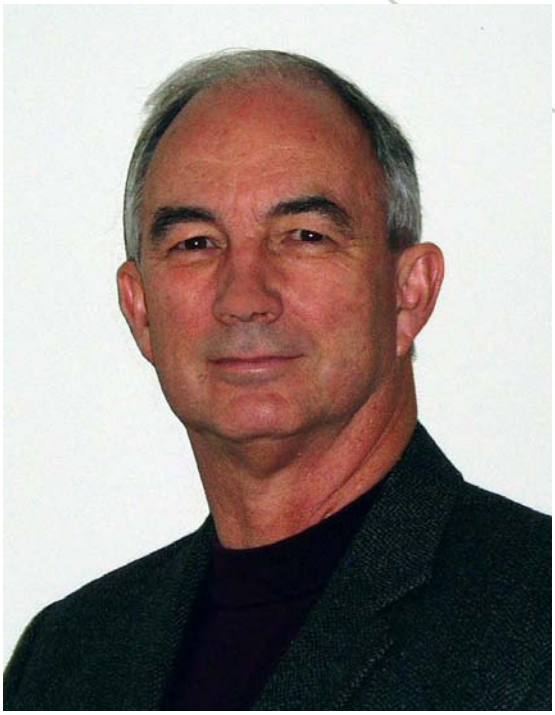
Background

In 2008 ICSU, the International Council for Science, published an excellent document spearheaded by the ICSU Planning Group on Natural and Human-induced Environmental Hazards and Disasters entitled A Science Plan for Integrated Research on Disaster Risk. This document clearly articulated the need for the Research Program on Integrated Research on Disaster Risk (IRDR) which was subsequently launched in 2008 by ICSU, the International Social Science Council (ISSC) and the United Nations International Strategy for Disaster Reduction (UN-ISDR). Quoting from the IRDR website, this is "a global, multi-disciplinary approach to dealing with the challenges brought by natural disasters, mitigating their impacts, and improving related policy-making mechanisms". As preparations for the first IRDR Conference are underway what follows is an interview with Gordon McBean, Chair of the IRDR Scientific Committee, on this ambitious research program.



Gordon Mc Bean, Chair IRDR, Scientific Committee

CODATA: *Gordon, what were the compelling factors which led the ICSU Planning Group in 2008 to the conclusion that the focus of the program should be solely on risk and disaster risk reduction and why was there, and indeed is there, a need for an integrated approach to this issue?*

Gordon McBean: The process started with the ICSU Priority Area Assessment (PAA) of all ICSU activities related to the environment and sustainable development. This report, completed in 2003, identified four areas where there was not, in the opinion of the PAA members, an appropriate level of ICSU activity. One of these was natural disasters. Through a Scoping Group and then a Planning Group, the focus was developed on risks due to so-called natural hazards – floods, storms, droughts, earthquakes, volcanoes, etc – because they were seen to be having major impacts on societies. Further review showed that there were already a number of ICSU or other programs on hazards, such as climate extremes, .../...

landslides, earthquakes, etc., but the existing projects were mostly either focused on a single hazard or discipline or in a specific region. The assessment of the Planning Group was that there were major scientific and societal benefits through taking an integrated approach – integrated across the hazards, across disciplines and on a global basis.

CODATA: *Are other organizations and consortia not already addressing these issues ?*

Gordon McBean: In the opinion of the Planning Group, there was no consortium fully addressing these issues in an integrated way, bringing together the multi-disciplinary teams addressing all the hazards around the world. The Planning Group recommended that an integrated research program be initiated and sustained over a decade or more.

CODATA: *The 2008 Science Plan highlights the importance of data and information and the legacy of the program - quoting from the Plan "An aim of the Program is to both generate new information and data and to leave a legacy of coordinated and integrated global data and information sets across hazards and disciplines with an unprecedented degree of access". What do you see are some of the challenges facing the program over the next 10 years in order to realize this aim ?*

Gordon McBean: Like all programs, it will be a challenge to bring together the financial resources and the highly qualified people to carry out the research and analysis. However, I am optimistic that this will happen.

CODATA: *We have seen the importance for countries to have speedy access to accurate scientific data from different countries in order to address the societal impacts of some of the worst natural disasters in recent years. What role can government and policy makers play in nurturing a data access environment that can be tapped into when such events occur ?*

Gordon McBean: Governments and policy makers need to ensure first that their information is openly and easily accessible. They need to support with resources the development and maintenance of data information systems so the data are collected, quality controlled, properly archived and maintained with accessibly for decades. Frequently, governments lose interest in these issues and part of the role of ICSU, ISSC and UN ISDR is to help to maintain the governmental support.

CODATA: *Gordon, we learned recently that IRDR have established a Working Group on Disaster Loss Data. Can you tell our readers a little more about this Group ?*

Gordon McBean: The Working Group has been established and will address some specific questions, including:

- Can we improve the existing data quality ?
- Can we make the data landscape more transparent ?
- Can we strengthen the data platform efforts ?

The WG will collaborate with the IUGG Commission on Data and Information, CODATA and the World Data Centers. Dr. A. Wirtz is the chair of the WG.

CODATA: *As your term as Chair of the IRDR Science Committee comes to an end later this year what do you see as your greatest achievement during your term in Office ? What has been your greatest challenge ?*

Gordon McBean: It has been an achievement collectively of the Science Committee to move forward from the Scientific Plan to an initial set of projects – FORIN, RIA, Data, Assessment – and to build support for the IRDR. Many challenges remain and particularly important is finding the support to move these from plans to real ongoing projects with appropriate support.

CODATA: *Many thanks, Gordon, for taking the time to participate in this interview*

Release of the 2010 Least Squares Adjustment of the Values of the Fundamental Constants

The CODATA Task Group on Fundamental Physical Constants is pleased to announce the public release of the 2010 Least Squares Adjustment of the values of the Fundamental Constants.

http://physics.nist.gov/cuu/Constants/index.html

The extensive publication "CODATA recommended values of the fundamental physical constants: 2010" is now in preparation and is expected to be published in both the Reviews of Modern Physics and the Journal of Physical and Chemistry Reference Data. The CODATA recommended values are an internationally recognized resource, used by scientists around the world and from surprisingly diverse disciplines. The universal acceptance of the CODATA recommended values and their widespread use leads to improved consistency and transparency of all results using fundamental constant values. Not surprisingly, previous adjustment publications have been very heavily cited.

This recognition has in turn resulted in the decision to use the CODATA recommended values when the proposed redefinition of the International System of Units is implemented sometime in the future. This redefinition would relate the units of the measurement system to fixed fundamental constant values of the Planck constant (h), the elementary charge (e), the Boltzmann constant (k), the Avogadro constant (NA) and the speed of light(c).

The Task Group on Fundamental Physical Constants, established in 1969, is an original Task Group of CODATA. The purpose of the Task Group 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".

This self-consistent set of values is obtained from a multivariate least squares adjustment (LSA) of all of the determinations of the values of the fundamental constants of nature. Our present policy is 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.

Barry Wood
Chairman CODATA Task Group on Fundamental Physical Constants

Also available at the above URL are downloadable pdf copies of previous adjustments published in Reviews of Modern Physics and Journal of Physical and Chemistry Reference Data, as well as background information related to fundamental constants, an extensive bibliography of publications pertaining to fundamental constants, and links to other related sources of information.

The Task Group on Fundamental Physical Constants maintains working documents on the BIPM website at **http://www.bipm.org/extra/codata/** and administrative documents on the CODATA website at **http://www.codata.org/taskgroups/TGfundconst/index.html**

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1st ICSU World Data System Conference: Global Data for Global Science

The WDS Scientific Committee is pleased to invite WDS Members and interested parties to The First ICSU World Data System conference: Global Data for Global Science from 3-6 September 2011 to be held in Kyoto. This will be the first international gathering of the WDS community and the perfect occasion to launch this ambitious programme. It will also be a unique opportunity to share common experiences and achievements and promote the importance of data management and long term data stewardship.

The ICSU World Data System (WDS) came officially into existence through a decision of the 29th General Assembly of the International Council for Science (ICSU) in October 2008 guided by the following strategic vision :

"...WDS will support ICSU's mission and objectives, ensuring the long-term stewardship and provision of quality-assessed data and data services to the international science community and other stakeholders."

The WDS has committed to advance the universal and equitable access to scientific data and information and to encourage multidisciplinary science. As one will discover in the programme of this conference, two dedicated sessions—one on Data Publication (S7) and another on Data Intensive Multidisciplinary Sciences (S5)—will strive to address these challenges with a focus on multidisciplinary data in the field of disasters and their impacts on society.

Another pressing challenge facing science is the integration of scientific data from all disciplines—including the social sciences— in order to create an integrated framework for scientists to produce openly accessible scientific knowledge useful to society. This vision guides the transition from isolated data centres and services to a common globally interoperable distributed data system, incorporating emerging technologies and new scientific data activities. The Application of Information Technologies to Data Systems (S6) session will provide an opportunity to highlight scientific and technological advances that could facilitate the achievement of the World Data System.

This conference will inaugurate a series of biennial WDS Conferences which will evolve to provide WDS Members with a forum for discussions and a unique platform to participate in the development of the System.

For more details see **http://wds-kyoto-2011.org/**.

We look forward to your participation.

CODATA Remembers its Polish Colleagues

During recent months, painful losses have been suffered by the Polish National Committee for CODATA: two of its outstanding members, Prof. DSc. Andrzej Maria Bylicki (1916-2010) and PhD. Janusz Šach (1934-2011), passed away. Both were well known among the international CODATA community. Prof. Bylicki was a highly valued specialist in physical chemistry, having authored numerous publications concerning the thermodynamics of phase equilibria, chemistry of carbon compounds, thermodynamic data for carbon compounds technology, etc. He joined the Institute of Physical Chemistry of the Polish Academy of Sciences in Warsaw in 1956 and for many years he headed the Department of Physical Chemistry of Basic Organic Stocks. He also collaborated closely with the Department of Petro- and Carbo-Chemistry of the Polish Academy of Sciences in Gliwice. Prof. Bylicki was one of the first scientists who initiated the CODATA activity in Poland and he chaired the Polish National Committee for CODATA from 1978-1997. He was also elected to the CODATA Executive Committee (1980) and as a Vice-President (1984). Until the last few years, Prof. Bylicki aided the Polish National Committee for CODATA by his experience and advice. He will be remembered not only for his eminent professional merits but also for his extremely friendly relations with his colleagues and collaborators.

CODATA Executive Committee Meeting Warsaw 2004
J Šach left, CODATA President S. Iwata center speaking to A. Bylicki.

Dr J. Šach, a lawyer by education who specialized in international law, was highly regarded by the authorities of the Polish Academy of Sciences as an experienced specialist in implementing important organizational undertakings. His organizational talents in particular were appreciated and highly esteemed during the organization of the International Conference and celebrations related to the 100th Anniversary of the Discovery of Polonium and Radium, held in Warsaw in 1998. He was nominated many times as a member of the Polish National Committee for ICSU. In addition, since the early years of the Polish National Committee for CODATA, Dr J. Šach served many times as a member and as Secretary, actively participating in its organizational endeavours. He was a very effective co-organizer of the 2004 meeting of the CODATA Executive Committee in Warsaw. His personal merits - highly cultured, a strong sense of duty, a subtle sense of humor, etc. - earned him many friends in the scientific community.

Forthcoming Meetings

- *1st ICSU WDS Conference "Global Data for Global Science"*, 3-6 September 2011 - Kyoto, Japan
- *DataCite 2011 Summer Meeting "Data and the Scholarly Record: the Changing Landscape"*, 24-25 August 2011 - Berkeley, USA
- *ICSU 30th General Assembly,* 24 September-1 October 2011 - Rome, Italy
- *IRDR Conference "Disaster Risk : Integrating Science and Practice"*, 31 October-2 November 2011 - Beijing, China
- *The PV-2011 Workshop*, 15-17 November 2011 - Toulouse, France
- *GEO - VIII Plenary Session*, 16-17 November - Istanbul, Turkey
- *7th International Digital Curation Conference : "Public ? Private ? Personal ? Navigating the Open Data Landscape"*, 5-7 December 2011 - Bristol, UK
- *IEA 2012*, 12-16 February 2012 - Recife, Brazil
- *Planet under Pressure : New Knowledge towards Solutions*, 26-29 March 2012 – London, UK
- *1st Global Thematic IASC Conference on the Knowledge Commons : "Governing Pooled Knowledge Resources in a World of Rapid Social and Technological Change. Building Institutions for Sustainable Scientific, Cultural and Genetic Resource Commons"*, 12-14 May 2012 - Louvain-la-Neuve, Belgium