

Reports from Conferences

## **18th International CODATA Conference and 23rd CODATA General Assembly**

By Kathleen Cass and Henry V. Kehiaian

CODATA, the Committee on Data for Science and Technology, held its 18<sup>th</sup> International Conference in Montreal, Canada, 29 September-3 October 2002. Approximately 250 participants from 37 countries participated. The four-day conference was hosted by the Canadian and US National Committees for CODATA. The National Research Council Canada, the Ministry of Science and Technology, Quebec and the National Academies US, were among the sponsors of the event.

Prof. Harlan Onsrud (USA) and Dr. Gordon Wood (Canada) served as co-chairmen of the event. The Conference featured six keynote plenary lectures by some of the most renowned scientists and data experts in the world, addressing following cross-cutting themes:

***Trends in Archiving Digital Data***, by K. Ashley (University of London Computer Center, UK);

***Preserving the Positive Functions of the Public Domain in Science***, by P. Samuelson (Berkeley Center for Law and Technology, University of California at Berkeley, USA);

***Integrating Bioinformatics Data into Science: From Molecules to Biodiversity***, by R. J. Robbins (Fred Hutchinson Cancer Research Center, Seattle, WA, USA);

***Economics of Information Services for Scientific and Technical Data in the Information Age: The View from a National Data Center in Japan***, by M. Negishi (National Institute of Informatics, Japan);

***Text Mining - the Technology to Convert Text into Knowledge***, by S. Matwin (School of Information Technology and Engineering, University of Ottawa, Canada) and

***Ethics in the Creation and Use of Scientific and Technical Data***, by M. G. K. Menon (President of LEAD, India).

CODATA 2002 involved twenty-four invited speakers from different scientific disciplines expanding on the themes presented during the plenary sessions. The following titles of invited lectures are illustrative:

***Strategies for Selection and Appraisal of Scientific Data for Preservation***, by S. Ross (Glasgow, UK).

***Scientific and Technical Data Policy and Management in China***, by H. Sun (Beijing, China)

***Interoperability of Biological Data Resources***, by H. Sugawara (Japan).

***Studies on the Economic Impact of the Intellectual Property Protection of Non-Original Databases***, by H. Tabuchi (Geneva, Switzerland).

***Ethics - An Engineers' View***, by H. Kremers (Berlin, Germany)

***Ethics in Scientific and Technical Communication***, by H. Ranasinghe (Sri Lanka).

***Publication, Retrieval and Exchange of Data: an Emerging Web-based Global Solution***, by H. V. Kehiaian (Paris, France).

***Scholarly Information Architecture***, by P. Ginsparg (USA)

***The Role of Scientific Data in a Complex World***, by W. Martienssen (Frankfurt am Main, Germany).

***Life Sciences Research in 2015***, by D. Y. Thomas (Montreal, Canada).

There were also 35 parallel sessions with approximately 190 contributed oral and poster sessions covering topics such as: Physical Science Data, Social Science Data, Biological Science Data, Informatics and Technology, Earth and Environmental Data, Data Science, Medical and Health Data, Data Policy, Technical Demonstrations.

Below are a few titles relating to chemical databases:

***The Handling of Crystallographic Data***, by B. McMahon (IUCr, UK)

***Dortmund Data Bank (DDB) - Status, Accessibility and Future Plans***, by J. Rarey and J. Gmehling (Oldenburg, Germany)

*State of CODATA Project on Information Systems on Gas Hydrates* (F. A. Kuznetsov, Novosibirsk, Russia).

*Knowledge Management in Physicochemical Property Databases – Knowledge Recovery and Retrieval of NIST/TRC Source Data System*, by Q. Dong, X. Yan, R. D. Chirico, R. C. Wilhoit and M. Frenkel (Boulder, Colorado, USA).

*Molten Salt Database Project: Building Information and Predicting Properties*, by M. Gaune-Escard (Marseille, France)

*Materials Data on the Internet*, by J. H. Westbrook (USA)

*Physicochemical Data in Landolt-Boernstein on Line* (R. Poerschke, Berlin, Germany)

*Expressing Measurements and Chemical Systems for Physical Property Data* (P Linstrom Gaithersburgh, MD, USA).

### **Events around the conference**

Additional CODATA related events took place around the conference. On 28 September, CODATA held a special course on “*Information Visualization*”. The instructors were: Nahum Gershon (MITRE, USA), John Dill (Simon Fraser University), Jean-Jacques Royer, (Ecole Nationale Supérieure de Géologie, France) and Bill Wright (Oculus Info, Inc., USA). The course gave participants a working knowledge of effective visualization approaches for presenting and data. The CODATA Task Group “Data Management and Virtual Laboratories” held a workshop on 29 September on “*Environmental Information in Satellite Imagery and Numerical Classification*”.

### **CODATA Prize Award 2002**

The 2002 CODATA Prize Award was presented at a special awards ceremony at the Conference. The recipient was Dr. Arthur D. Pelton from École Polytechnique, Montreal Canada. Dr. Pelton is recognized for his outstanding achievement in the area of scientific and technical data. He is widely acknowledged as an innovative leader in the field of computational thermodynamics, as applied to metallurgical and chemical systems of interest in industrial and academic research. More details can be found on <http://www.codata.org>.

### **23<sup>rd</sup> CODATA General Assembly**

The 23rd CODATA General Assembly was held immediately after the CODATA 2002 Conference on 4-5 October 2002. Over 50 people attended during the two-day meeting. Many decisions pertaining to the general administration of CODATA were made. The following reflects just some of the highlights of the meeting.

### **New Board**



Shuichi Iwata  
CODATA New  
President

The new CODATA President, elected by the Assembly for the coming four years period, is Prof. Shuichi Iwata (University of Tokyo, Japan). The other officers and members of the Board are:

Past-President: John Rumble, Jr (USA), Vice-Presidents: Alexei Gvishiani (Russia) and Honglie. Sun (China), Secretary General: Paul Mezey (Canada), Treasurer: Jean-Jacques Royer (France).

Ordinary members of the Executive Committee elected are: Robert Chen (USA), Jean Garnier (France), Horst Kremers (Germany), Takashi Kunisawa (Japan), Krishan Lal (India), Steve Rossouw (South Africa), Gordon Wood (Canada) and Vladimir Yungman (Russia).

### **Task Groups**

Through its Task Groups, CODATA executes an ambitious international scientific agenda, addressing major data needs and policy issues in a broad range of subjects. These activities are selected at the biannual CODATA General Assemblies. The following eight Task Groups were approved at the 23<sup>rd</sup> CODATA General Assembly for the coming two years:

#### ***DSAO (Data Sources in Asian and Oceanic Countries).***

This group provides data experts in Asian-Oceanic countries with an organisation that encourages and facilitates regional knowledge sharing and co-operation in many areas of scientific and technical data. One area of particular emphasis is the promotion and development of reliable databases in this region.

#### ***Global Species Data Network.***

The goal of this group is to provide a uniform and validated quality index of names of all known species for use as a practical tool.

***Data Information and Visualization.*** This Group brings to data workers through out the world the latest data technologies through workshops and other mechanisms. As database management becomes an everyday tool in every area, these workshops introduce these technologies to diverse fields, such as those involved in computerisation of museum collections. (See example of workshop above).

#### ***Fundamental Constants.***

This Group periodically provides 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.

#### ***Virtual Laboratories in Earth Physics and Environmental Sciences.***

The objective of this Group is to develop new mathematical technologies for handling of data and their interpretation in terms of knowledge and the application of the developed technologies to comprehensive analysis of different types of data, particularly those that relate to the earth physics and environmental sciences.

***Biological Collection Data Access.*** The objective of group is to foster accessibility of existing and emerging biological collection data banks at the international level by developing and coordinating proposals for data and metadata standards and standard protocols.

#### ***Preservation and Archiving of Scientific and Technical Data in Developing Countries.***

The objectives of this Group are: to promote a deeper understanding of the needs of developing countries with regard to long-term preservation, archiving and access to scientific and technological (S&T) data, the development and adoption of improved archiving procedures, technologies, standards and policies and provide an interdisciplinary forum and mechanisms for exchanging information about S&T data archiving requirements and activities with particular focus on the concerns and needs of developing countries.

#### ***Data on Natural Gas Hydrates.***

The group has as its objective the development of the concept of a comprehensive information system of all aspects of natural gas hydrates. It will formulate requirements on the type of data needed in the system and their quality sufficient for considering both basic problems of origin and transformation of gas hydrates in natural conditions and ways of exploitation of resources of natural gas hydrates. This group received a large grant award of 100 000US\$ from ICSU for the period 2003 and 2004.

### **Completed Projects**

A short report on the successful completion of the project on ***Standard Physicochemical Data Formats (SELF) by the IUPAC-CODATA Task Group (IUCOSPED)*** was presented at the meeting. The related ***IUCODIX Project***, in association with the ***International Council for Scientific and Technical***

**Information (ICSTI)**, received a large grant of 100 000 US\$ from the **International Council for Science (ICSU)** and the support of **ITODYS, University of Paris VII** (Paris, France). The grant served to develop a model portal, called *DataExplorer*, at the **Fachinformationszentrum Karlsruhe** (Germany) DataExplorer implements the SELFs for a variety of data sources, properties and chemical systems. The main contributors were the Institute of Chemical Technology (Prague, Czech Republic), the Glushko Thermocenter (Moscow, Russia), the Texas Engineering Experiment Station (College Station, Texas, USA), and DECHEMA (Frankfurt am Main, Germany) A final report on this project was also presented to the ICSU General Assembly (Rio de Janeiro, Brazil) in September 2002.

More information on *DataExplorer* can be found on <http://www.fiz-karlsruhe.de/dataexplorer> ( ID: everyone, Password: sesame).

### **Data Science Journal**

Since CODATA's 22<sup>nd</sup> General Assembly in Baveno in 2000, CODATA launched its electronic *Data Science Journal*. The first issue went online in April 2001. Prof. Jack Smith (Queen's University, Belfast, UK) who is Editor-in-Chief of the Journal, gave a special presentation during the Assembly in Montreal. This electronic web-based peer-reviewed Journal, is freely available to scientists throughout the world. As the Journal matures, additional features such as data collections, visualizations and more can be added as demanded by the scientific community. The Journal features high quality articles on advances in data science and technology. It also includes articles addressing emerging issues of concern to the scientific and technical community, such as problems concerning data access and Intellectual Property Rights. A meeting of the Editorial Board of the Journal also took place in Montreal on the 30 September. More information on the journal can be found on <http://www.datasciencejournal.org>

Over-all the General Assembly was very constructive and the following two years promise to be very exciting, starting in March 2003-02-11 with the International Symposium on Open Access and the Public Domain in Digital Data and Information for Science. This meeting is being jointly organized by CODATA, the National Academies US, ICSU, UNESCO, and ICSTI.

More information on this and other activities can be found on the website <http://www.codata.org> or contact the CODATA Secretariat at 51 Bld du Montmorency, 75016 Paris.

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