

# **Annual Report for 2003 of the INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS (IUGG)**

## **INTRODUCTION**

The International Union of Geodesy and Geophysics (IUGG) is a non-governmental, non-profit organization dedicated to advancing scientific knowledge of Earth including its physical components, dynamic behaviors, and environment in space, and to applying the knowledge gained by such studies to the needs of society, such as mineral resources, reduction of the effects of natural hazards and environmental preservation. Established in 1919, IUGG brings together seven semi-autonomous International Associations that address different disciplines of earth science. Through these Associations, IUGG promotes and enables research in the physical, chemical and mathematical studies of the Earth by providing a framework for collaborative research and information exchange. The Union gives particular emphasis to the scientific needs of developing countries, and strives to improve the capacity of all nations of the world to observe and understand the natural physical processes that bear upon their safety and economies.

The web site address is **<http://www.IUGG.org>**.

## **MEMBERSHIP**

By their very nature, geodetic and geophysical studies require a high degree of international co-operation. IUGG is critically dependent on the scientific and financial support of its member Adhering Bodies. The list of present and past IUGG Adhering Bodies is published annually in the IUGG Yearbook, which is posted on the web site and is available from the Secretariat. Each Adhering Body establishes a National Committee for IUGG, and names Correspondents to each Association (as appropriate). During 2003, the Union had 64 Member Adhering Bodies counting the loss of 4 members (Greece, Lebanon, Malaysia, and Myanmar, and the gain of two new members (Bosnia and Hercegovina, and Mauritius). Several members were in observer status because they were in arrears of dues payment. Nine Adhering Bodies were in Associate Member status. Associate Members do not pay dues and may not participate in Council meetings, vote, or hold office. However, beginning with the General Assembly in 2007, Associate Members may attend the Council meetings as listeners. New Member Country applications are being actively encouraged.

## **STRUCTURE**

Responsibility for directing the Union's affairs is vested in the IUGG Council by the Statutes and Bylaws. The IUGG Council consists of the Council Delegates, who are designated by the Adhering Body of their respective countries as their representatives for each Council meeting. A Bureau, an Executive Committee and a Finance Committee administer the IUGG between Council meetings. The Executive Committee has the particular responsibility of overseeing the scientific programmes of the Union. There is no permanent Secretariat; the National Committee of the Secretary General is expected to provide administrative support for Union affairs. The officers of IUGG are listed on the IUGG web site.

The Union brings together seven semi-autonomous Associations, each responsible for a specific range of topics or themes within the overall scope of the Union's activities and each with a sub-structure. The Associations convene their own assemblies and sponsor particular symposia, often in partnership with one another. Each is managed by a Bureau and/or an Executive Committee elected during their assemblies. Within its own discipline each Association is responsible for determining its own program of investigations and for supporting the activities of its own component parts. All earth

scientists, worldwide, are eligible to participate in IUGG and Association assemblies, workshops, and symposia, although only scientists from member countries with dues paid may serve as officers.

### **Associations**

The seven International Associations are listed below, and short reports on their 2003 activities are included here. Additional information about each Association is given on their web sites, which can be accessed from the IUGG web site.

- International Association of Geodesy (IAG)
- International Association of Geomagnetism and Aeronomy (IAGA)
- International Association of Hydrological Sciences (IAHS)
- International Association of Meteorology and Atmospheric Sciences (IAMAS)
- International Association for the Physical Sciences of the Oceans (IAPSO)
- International Association of Seismology and Physics of the Earth's Interior (IASPEI)
- International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

### **Inter-Association Commissions, Committees, and Working Groups**

Owing to the interactive nature of the subject fields managed by the Union's Associations, a number of Inter-Associations Commissions have been established that promote the study of particular interdisciplinary problems. In 2003, the following bodies were active:

- Commission on Geophysical Risk and Sustainability (GeoRisk)
- Commission on Mathematical Geophysics (CMG)
- Committee on the Study of Earth's Deep Interior (SEDI)
- Working Group on Geophysics: The Future (GTF)

### **GENERAL ASSEMBLIES OF THE UNION**

General Assemblies have been held since 1922 and, since 1963, at 4-year intervals. These assemblies provide an extraordinary opportunity for earth scientists from around the world to gather and share expertise, research data, and results. Past IUGG General Assemblies are listed in the IUGG Yearbook and on the web site.

#### **The XXIII General Assembly**

2003 was a General Assembly year. The XXIII General Assembly was held in Sapporo, Japan, June 30 – July 11, 2003. This was the best-attended IUGG General Assembly ever, with 4151 attendees. The amount of money raised to support attendance from all sources exceeded \$630,000, the most ever raised for a General Assembly, primarily due to the efforts of the Local Organizing Committee chaired by Dr. S. Uyeda. Along with a full scientific programme arranged by the IUGG Associations, there were 12 Union Symposia and 59 inter-Associations Symposia. The four Union Lectures, each followed by a Union Symposium, were well attended and have set a high standard for excellence for future General Assemblies. A monograph based on all of the Symposia under the Union theme "State of the Planet: Frontiers and Challenges," is in preparation (R.S.J. Sparks, coordinator).

The last Union Symposium at the Sapporo General Assembly reported the work of a group of young scientists (~30 years old, one from each association) charged with developing a vision for the future of the geosciences and examining the role that IUGG should play in advancing the geosciences. The Union session was excellent, and their written report is posted on the IUGG web page under Publications/Reports. The direct link to the report is <http://www.iugg.org/geosciences.html>.

In addition to the usual scientific symposia, the Local Organizing Committee arranged an Outreach Program consisting of 34 special events such as public lectures, panel discussions, and

presentations to and by school children. These took place not only at the Assembly venue, but also in Sapporo City and towns spread throughout Hokkaido. Masaru Kono, outgoing President of IUGG, commended the program by saying " In the times when there are so many difficult problems of world-wide scale which are crucial to human society (global warming, natural hazards, water crisis, just to name a few), it is very important that the academic society can talk to the public directly. The Outreach Program in Sapporo showed one way of opening up such communication."

An extraordinary memory of the General Assembly was that the Emperor and Empress of Japan accepted the invitation of the Local Organizing Committee to participate in the Welcome Ceremony, where their warm presence and sincere interest in the work of IUGG was appreciated.

IUGG Adhering Bodies were invited to prepare quadrennial reports of the activities of their national committees since the 1999 General Assembly. 17 members responded to this invitation, and their reports are posted on the IUGG web site.

The IUGG Council met 3 times during the General Assembly. A special meeting of Council delegates preceded the Council meeting on 9 July so that the Delegates could discuss matters of business informally. As a result of the success of this meeting, increased opportunities for informal interaction among Council Delegates will be planned for the 2007 General Assembly. Actions of the Council included admission of Albania, Armenia, Bosnia and Hercegovina, Colombia, Mauritius, and Peru; transfer to Associate status of Morocco, Nigeria, Pakistan, Serbia and Montenegro; and a decrease in category for France and Indonesia. The budget for 2003-2007 was approved which estimates an income and expenditure over the next 4 years of 1.5 Million US dollars. Officers of the Bureau and Finance Committee were elected. Two modifications to the IUGG Statutes and By-Laws were adopted. The first one opened the Council Meetings to persons who wish to listen, including Associate Members. The second proposal reduced the work and also the size of the IUGG Finance Committee from 5 to 4 members. Finally, the Council approved 11 Resolutions (posted on the IUGG web site) and selected Perugia, Italy, as the location for the 2007 General Assembly.

The Bureau officers elected by the Council were

President: Dr. Uri Shamir (Israel)

Vice President: Dr. Tom Beer (Australia)

Secretary General: Dr. Jo Ann Joselyn (U.S.A.)

Treasurer: Dr. Aksel Hansen (Denmark)

Bureau Members: Dr. Y.T. Chen (China), Dr. H. Gupta (India), Dr. A.A. Tealeb (Egypt)

The Finance Committee Members elected by the council were Dr. M. Hamlin (U.K.), Dr. D. Jackson (U.S.A.), Dr. B. Kennett (Australia), Dr. K. Suyehiro (Japan), and Dr. J. Vilas (Argentina). The Committee selected Dr. Hamlin as their Chair. In accord with the decision of the IUGG Council, the next few years will be a period of transition and 4 members will be elected to the Finance Committee in 2007.

## **OTHER SCIENTIFIC MEETINGS**

Each Association organizes its own scientific assembly in the 4-year interval between Union General Assemblies in order to report scientific progress and conduct Association business. Associations sometimes meet jointly with the purpose of promoting interdisciplinary science.

Numerous topical and regional symposia and workshops are organized on other occasions by the Associations to provide opportunity for geodesists and geophysicists worldwide to discuss their respective methodologies, results and hypotheses and to plan collaborative research projects. The

symposia, often held in non-urban locales, are intended to be particularly helpful to the younger scientists from the developing countries of the world.

## **PUBLICATIONS**

The IUGG publishes an annual Yearbook, in which the organizational structure and officers of each body within the Union are listed. The Yearbook is printed and mailed to all Member Adhering Bodies and relevant persons and organizations, and is posted on the IUGG web site. The Union distributes a short electronic newsletter (the IUGG E-Journal) monthly to Adhering Bodies and National Committees. Each Association manages their own publications.

## **ACTIVITIES IN 2003**

### **Administration**

The IUGG Bureau met 3 times during the Sapporo General Assembly. Discussions included matters of membership, the budget, elections, and submitted revisions to the Statutes and By-laws. The Bureau arranged for two special meetings concerning Membership. The first was an informational session on 4 July for participants in the Assembly from countries that are not now members of IUGG. The second meeting was held on 7 July for representatives from Adhering Bodies in Associate status. These persons were informed of the business being conducted in the Council meetings, and the procedures to become regular members of IUGG.

The IUGG Executive Committee met 3 times during the Sapporo Assembly. Actions of the Executive Committee included budgetary allocations for the next quadrennium for support for inter-Association bodies, approval of full partnership in the consortium that is planning and supporting the International Year of Planet Earth (IYPE) including a financial obligation of \$30,000, approval of the IUGG liaisons to ICSU and other non-governmental and inter-governmental scientific bodies, a decision to refer the issue of the status of the International Commission on Snow and Ice (ICSI) to the 2004-2007 Executive Committee, and agreement to form a committee to study biomass burning.

### **IUGG Grants**

In 2003, IUGG awarded \$5,000 to support scientific workshops in New Zealand and Italy as proposed by the Associations and inter-Associations Commissions. This money was used primarily to assist attendance of young and underrepresented scientists from economically disadvantaged countries. An additional \$5,000 was awarded to provide support for workshops in the Philippines and Indonesia.

IUGG awarded \$36,905 to support five interdisciplinary initiatives proposed by the Associations and inter-Associations Commissions. These initiatives, besides being interdisciplinary, also benefited developing countries.

### **ICSU**

IUGG responded to a call for nominations from the International Council for Science (ICSU) for 2 Assessment Panels: Scientific Data and Information, and Rights and Responsibilities of Science and Society, and a request from the ICSU Committee on Scientific Planning and Review (CSPR) to identify emerging scientific issues as part of a process that could potentially define new ICSU initiatives.

Dr. Uri Shamir had been appointed as a member of the CSPR Panel of Area Assessment on Environment and its Relation to Sustainable Development in 2002. The Panel delivered its report to the CSPR in November 2003 after a year of deliberations.

IUGG responded to a call for nominations of persons who could participate in a study of the societal consequences of an asteroid impact.

IUGG participated in an ICSU Union initiative on the general topic of Science for Health and Well-being. After exploring the various aspects of the topic, the Unions strongly recommended that ICSU should consider the general topic of the relationships and contributions of science to maintain and increase the health of the populace and the environment.

IUGG wrote a letter endorsing the ICSU "Agenda for Action" with regard to Science in the Information Society, and wrote a statement and sent an observer to the December 8-9, 2003 conference in Geneva, Switzerland, on the Role of Science in the Information Society.

### **ICSU Grants**

The IUGG International Association for Geomagnetism and Aeronomy (IAGA) received an award of \$35,000 from the International Council of Science (ICSU) in 2003 for their proposal "Rescue of old analogue magnetograms by converting to digital images." The project's outcome was that 177 station-years of 64,650 old and historic magnetograms from 9 Russian, two Indian, and one German magnetic observatory are now converted to digital images, available at <http://apollo.wdcb.ru/historic/> and <http://swdcft49.kugi.kyoto-u.ac.jp/film/>. The stations chosen were selected from a pre-IGY Catalog of Analogue Geomagnetic Data compiled from the time period 1841-1960, and the most rare magnetograms (those existing in one copy only) were digitized first. The magnetogram conversion technique was developed by a team at Kyoto University, Japan. The hardware purchased with the project support is now available for the staff at the World Data Centres in India, Russia, and Japan for the follow-on conversion of analogue magnetograms into digital images in their routine work, as well as for specific rescue projects.

IUGG did not submit a proposal for funding in 2004, but supported several grant proposals including four that were selected.

### **ACTIVITIES OF THE ASSOCIATIONS**

The following reports, prepared by the Secretaries General of the Associations illustrate the impressive range of activities within each Association as well as their dedication to supporting science within developing countries. Each Association has a web site where much more information can be found.

Dr. Jo Ann Joselyn, IUGG Secretary General

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## Annual Report for 2003 International Association of Geodesy

### 1. Central Bureau activities.

The Bureau publishes a bi-monthly newsletter, which is printed in the Journal of Geodesy. This is distributed with the Journal to all national representatives and the members of the IAG Executive Committee. The newsletter includes a listing of all geodetic publications (provided by the IAG Bibliographic Service). It also includes updates to the Geodesists Handbook and meeting reports.

The Central Bureau has maintained the IAG home page until Nov. 2003. This function, is now taken over by the new IAG Communication and Outreach Branch, see below.

The Central Bureau also maintains and updates a database of addresses and of individual members (see below).

### 2. The Executive Committee (EC).

At a meeting of the IAG Council in September 2002, new statutes and by-laws were adopted by the Council. Since then a major task of the EC has been to implement the new structure. It is based on topic-oriented Commissions, on the IAG Services, and on a new structural element, the Communication and Outreach branch (COB). Furthermore so-called inter-commission committees (ICC's) and projects may be established.

The EC had several meetings where the main topic was the implementation of the new structure.

- The first meeting was held on April 11, 2003 in Nice, France ([http://www.gfy.ku.dk/~iag/ec\\_nice2002f.htm](http://www.gfy.ku.dk/~iag/ec_nice2002f.htm)), where another main item was the preparation of the IUGG/IAG General Assembly.
- During the IUGG/IAG General Assembly in July several meetings were held (<http://www.gfy.ku.dk/~iag/Mec1july.htm>, <http://www.gfy.ku.dk/~iag/GBEC7juli1.htm>).
- The EC prepared the establishment of three ICC's, namely on Standards, on Planetary geodesy and on Theory, and an IAG Project called "Integrated Global Geodetic Observing System" (IGGOS), ([http://www.gfy.ku.dk/~iag/iggos\\_prop\\_june\\_03.htm](http://www.gfy.ku.dk/~iag/iggos_prop_june_03.htm)).

### 3. IUGG/IAG General Assembly, July 2003, Sapporo, Japan.

This meeting is considered to be too long, so IAG has reduced its own program to only 4+4 weekdays. This program covered presentations of reports and scientific papers for the 5 IAG Sections in the 7 first days, and the last day was devoted to a symposium on IGGOS. Publications of reviewed proceedings from the section symposia are in preparation and will be published in the IAG Symposium Series by Springer Verlag. All reports had been published before the General Assembly in "Travaux de l'Association Internationale de Géodésie", on a CD-ROM.

National reports were distributed at the General Assembly. Many were available in electronic form. They are now available through links at the IAG home page.

Apart from having its own symposia, IAG also took part in a number of inter-association symposia, and several IAG committees organized splinter meetings during the assembly.

During the IAG General Assembly the Council had 2 meetings. The auditors reported on the accounts, and a new budget was approved. The council also adopted a number of resolutions, which subsequently were adopted as general IUGG resolutions. The council also approved the establishment of the above-mentioned ICCT's and strongly endorsed the IGGOS project. The council did not perform any elections, since elections had been completed before the general assembly by mail ballot.

An account of the elections and of the administrative meetings will be published in the Geodesists Handbook, to be published in the spring of 2005.

4. Individual membership.

With the new statutes and by-laws individual membership has been introduced. The individual members will receive a newsletter and various benefits. The membership fee is USD 50, with a discount of 1 year if the membership fee is paid for 3 (4) years. Institutions may on behalf of their employees pay the institutional membership fee. Students and retired persons are members for free on the condition that they can receive the newsletter by e-mail. By the end of the year 2003 60 scientists had signed up as members.

5. Communication and Outreach.

Based on two responses to a call for participation the EC decided to establish the new COB under the leadership of Prof. J.Adam at the Budapest University of Technology and Economics. The COB has established a modern web page: <http://www.iag-aig.org> and prepares material for the promotion of IAG activities.

6. Coordination with organisations within surveying, cartography and remote sensing.

The IAG president participated in a meeting of the Joint Board of the Mapping Societies in Durban, August 2003. It was decided to continue an informal cooperation.

C.C.Tscherning  
Secretary General, IAG

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## Annual Report for 2003 International Association of Geomagnetism and Aeronomy

The year 2003 has been dominated by the XXIII General Assembly of the International Union of Geodesy and Geomagnetism (IUGG 2003), held in Sapporo, Japan on 30 June – 11 July 2003, and the associated General Assembly of IAGA.

### Preparations for IUGG 2003

Preparations of the IAGA scientific programme for Sapporo involved a large fraction of the IAGA scientific community during the first half of the year. The IUGG Scientific Programme Committee held its final meeting in Tokyo in the first week of March. The Secretary General visited Sapporo in connection with the Tokyo meeting to be informed of and discuss the conference facilities.

### IUGG 2003, Scientific Programme

The number of IAGA scientists registering for the Assembly was 741. IAGA scientists led 53 symposia distributed as follows between inter-Association symposia (JSA) and IAGA division/commission ones:

JSA	9
Division I	10
Division II	7
Division III	14
Division IV	4
Division V	7
Inter-Divisional Commission on Developing Countries (IDCDC)	2

Of the 9 joint symposia, 4 were led by Division I and 5 by Division II.

The number of papers accepted for those 53 symposia was 1601, distributed as follows:

JSA	347
Division I	221
Division II	234
Division III	446
Division IV	125
Division V	195
Inter-Divisional Commission on Developing Countries (IDCDC)	33

### Some decisions taken at business meetings in Sapporo

- The IAGA Conference of Delegates elected the new IAGA President for the quadrennium 2003-2007, Charles Barton (Australia), and a new Executive committee.
- The (old) Executive Committee appointed new Division/Commission Heads (in accordance with proposals of the Division business meetings).
- At the business meetings of the working groups of the various divisions, new Chairs and Co-Chairs were elected/appointed.
- The (old) Executive Committee agreed to allocate the following amounts to meetings to be held after the Assembly and before the end of 2004:
  1. 2<sup>nd</sup> IAGA/ICMA Workshop on the vertical atmospheric coupling USD 1000
  2. XI IAGA Workshop on geomagnetic observatory instruments USD 3000
  3. 3<sup>rd</sup> IAGA/ICMA Workshop on long-term trends in the upper atmsp. USD 1000
  4. 9<sup>th</sup> Meeting on paleo-, rock-, and environmental magnetism USD 1000

5.	3 <sup>rd</sup> General assembly of SPARC	USD 500
6.	35 <sup>th</sup> General Assembly of COSPAR	USD 500
7.	Workshop to celebrate the 100-year anniver. of Ebro Geomag. Obs.	USD 1000
8.	17 <sup>th</sup> electromagnetic induction workshop	USD 1500

*IGY + 50: IAGA Task Group proposal*

1. Establish an electronic Geophysical Year (eGY; Union-wide)
2. Support CAWSES as an IAGA-dominant I\*Y
3. Provide input from IAGA to other I\*Ys (IYPE, IHY, IPY)

**Preparations for the IAGA Scientific Assembly in Toulouse in 2005**

Preparations of the scientific programme of the Toulouse Assembly have been going on during the last several months of 2003. A meeting of Division Heads on programme matters was held in connection with the fall AGU meeting in December 2003.

**IAGA brochure**

A new IAGA brochure was produced before IUGG 2003 and was distributed to all participants at the Assembly. Charles Barton led the effort.

**IAGA web site**

A new IAGA web site ([www.iugg.org/iaga](http://www.iugg.org/iaga)) has been developed by David Kerridge. Details on all items listed above can be found at the site, and much more.

**IAGA News No. 40**

IAGA News No. 40 was distributed over the net to some 800 IAGA scientists all over the world in December of 2003. It can be found also at the IAGA web site. David Kerridge provided the major effort needed to give IAGA News its new format.

**Thanks to the retiring President**

Warm thanks are directed to David Kerridge for his great job in the leading position of the Association, not the least in educating the new Secretary General.

Dr. Bengt Hultqvist  
Secretary General of IAGA

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## Annual Report for 2003

### International Association of Hydrological Sciences

The main event of year 2003 for IAHS has been its *General Assembly* held in July at *Sapporo* in the framework of the *IUGG General Assembly*. IAHS has been the lead Organization for 9 Symposia and 8 Workshops and co convened 15 events together with other IUGG Associations. IAHS also contributed to the Union Symposia “*State of the Planet*”. *The Hydrology 2020 Working Group*, launched in Maastricht two years ago, has presented the present advancement of his Work. The IAHS Bureau met two times and the nine IAHS Commissions held their Assembly. More than twenty countries participated to the election of the new IAHS Officers. Arthur Askew from Australia is the New President-elect and Pierre Hubert (France) has been elected as Secretary General. Louise Heathwaite (UK), Xia Jun (China) and Chris Leibundgut (Germany) are the new Vice-Presidents. 45 Officers of the Commissions, including 7 women have also been elected.

The development of the *IAHS Prediction of Ungauged Basins (PUB)* initiative has been approved in Sapporo and his “Science and Implementation Plan” has been finalized and published in the December issue of *Hydrological Sciences Journal*. A first regional meeting has been held in Paris (November 2003) and an Australian-Japanese meeting is supposed to be held in Perth (Australia) in February 2004. The launching of different Working Groups is planned to begin next year. The PUB initiative has been presented to the Water World Community during the *Third World Water Forum* held in Kyoto in March. During this Forum IAHS participated also to a Symposium devoted to Floods.

In Sapporo the IAHS bureau has been officially informed of the wish of *ICSI* (International Commission of Snow and Ice) to become a full Association within IUGG. IAHS understands the reasons of this request and will accompany ICSI in its moves.

The choice of *Foz do Iguaçu* (Brazil) as venue of the Next *IAHS Scientific Assembly* to be held in 2005 has been definitively decided in Sapporo. The program of this Assembly has been discussed during the second half of 2003 and has been published in the IAHS Newsletter and posted on the IAHS Web Site in the first days of 2004.

In 2003, about 50 scientific events have been organized, sponsored or supported by IAHS and its Commissions. Among them we would like to quote the followings:

- 2nd IWRM International Symposium on Integrated Water Resources Management (Stellenbosch, South Africa, 22-24 January 2003);
- International Conference on Advances in Flood Forecasting in Europe (Rotterdam, The Netherlands, 3-6 March 2003);
- Symposium on Mass Balance of Andean Glaciers (Valdivia, Chile, 12-13 March 2003);
- International Conference on the Hydrology in the Mediterranean and Semiarid Regions (Montpellier France, 1-4 April 2003);
- National Seminar on Management of Water Resources (Delhi, India, 16-17 May 2003);
- Isotope Hydrology and Integrated Resources Management, 40th Anniversary International Symposium (Vienna, Austria, 19-23 May 2003);
- International Conference Ecohydrological Processes in Northern Wetlands (Tallinn, Estonia, 30 June - 4 July 2003);
- Hydrofractals'03 (Monte Verità, Ascona, Switzerland, 24-29 August 2003);
- Third International Conference on Debris-Flow Hazards Mitigation: Mechanics, Prediction and Assessment (Davos, Switzerland, 10-12 September 2003);
- ICGRHWE International Conference on GIS and Remote Sensing in Hydrology, Water Resources and Environment (Three Gorges Dam, China, 16-19 September 2003);
- MODFLOW and More 2003: Understanding through Modelling (Golden Colorado, USA, 17-19 September 2003);
- International Seminar on Watershed Development and Special Colloquium on Drinking Water

- Supply in SAARC Countries (Visakhapatnam, India, 16-18 October 2003);
- International Workshop Hydrological networks for integrated and sustainable water resources management (Koblenz, Germany, 22-23 October 2003);
- Extreme hydrological Events: Theory, Modelling and Prediction (Moscow, Russia, 3-6 November 2003);
- A contribution to PUB: Multiple Scale in Hydrology and Space Remote Sensing (Paris, France, 17-19 November 2003);
- The Challenge of Sustainable River Basin Development in Nigeria (Yola, Adamawa State, Nigeria, 2-4 December 2003);
- The basis of Civilisation - Water Science? (Rome, Italy, 3-6 December 2003)

In 2003 *IAHS Press* published six issues of the *Hydrological Science Journal*. Three issues of the *IAHS Newsletter* have also been published and widely disseminated free of charge, both as hardcopies and on the Web. A brochure celebrating the *IAHS 80<sup>th</sup> Anniversary* has been published and widely disseminated. *IAHS Press* also published eight “*Red Books*”:

- Calibration and Reliability in Groundwater Modelling: A Few Steps Closer to Reality, *Edited by K. Kovar & Z. Hrkal*, IAHS Publication 277.
- Hydrology in Mediterranean and Semiarid Regions, *Edited by Eric Servat, Wajdi Najem, Christian Leduc & Ahmed Shakeel*, IAHS Publication 278.
- Erosion Prediction in Ungauged Basins (PUBs): Integrating Methods and Techniques, *Edited by Dirk H. de Boer, Wojciech Froehlich, Takahisa Mizuyama & Alain Pietroniro*, IAHS Publication 279.
- Water Resources Systems Global Change, Risk Assessment and Water Management, Edited by Stewart Franks, Günter Blöschl, Michio Kumagai, Katumi Musiaka & Dan Rosbjerg, IAHS Publications 280 & 281.
- Weather Radar Information and Distributed Hydrological Modelling, Edited by Yasuto Tachikawa, Baxter E. Vieux, Konstantine P. Georgakakos & Eiichi Nakakita, IAHS Publ. 282.
- Erosion and Sediment Transport Measurement in Rivers: Technological and Methodological Advances, *Edited by J. Bogen, T. Fergus & D. E. Walling*, IAHS Publication 283.
- World Catalogue of Maximum Observed Floods / Répertoire mondial des crues maximales observées, *Compiled by Reg Herschy*, IAHS Publication 284.

The *IAHS TFDC* (Task Force for Developing Countries) continued its action and distributed free of charge all *IAHS* publications (*Hydrological Science Journal* and the *Red Books*) to more than 60 selected Universities and Research Institutions of Africa, Asia, South-America and Eastern Europe.

The close cooperation of *IAHS* with *UNESCO* and *WMO* has been continued, especially with our participation the the XIV<sup>th</sup> *WMO* Congress, to the *IHP/UNESCO* Bureau, the preparation of the 7<sup>th</sup> *UNESCO/IAHS Kovacs Colloquium* to be held in Paris in June 2004 the theme of which will be “Scales in hydrology and Water Management”, and our participation to the *UNESCO-WMO Standing Group* on the *International Glossary of Hydrology*.

Dr. P. Hubert, *IAHS* Secretary General

Web: <http://iahs.info>

**Annual Report for 2003**  
**International Association of Meteorology & Atmospheric Sciences**

**1. The IUGG/IAMAS Scientific Assemblies in Sapporo**

In March, SG participated in a meeting of the Scientific Organizing Committee in Tokyo and Sapporo where program, space and meeting schedules were finalized.

The Sapporo Assemblies, 30 June - 11 July, were the highlights of the IAMAS activities. ~1700 Abstracts were received for 43 IAMAS-controlled symposia. IAMAS scientists were leading two of six Union Symposia. Eighteen Joint Symposia, one Joint Workshop, 9 Inter-Commission Symposia and 15 Commission Symposia were held. IAMAS co-sponsored 19 Joint Symposia. 823 of 4151 IUGG participants were from IAMAS, the biggest Association participation.

SARS complicated financial support for scientists from needy countries. In the end the Local Organizing Committee awarded \$82685.53, while IAMAS awarded another \$16000 bringing the total support of IAMAS scientists to ~\$100000. The IAMAS component itself is of the order of \$40000.

Two events are worthwhile to be highlighted:

- The daily Sushi-Lunch Lectures given by giants in the field: Prof. W. R. Peltier, Prof. D. Rosenfeld, Prof. Eugenia Kalnay, Prof. John Hallett, Dr. J.F.W. Purdom, Dr.M. Shapiro, Prof. K. Nakamura, and Dr. A. Cazenave;
- The Celebration of Profs. Nakaya and Magono, former Professors at Hokkaido University, in a special Saturday-morning event with welcoming addresses by the Presidents of IUGG and Hokkaido University, a main scientific talk by Prof. John Hallett and an excellent biographical account of the lives of the honorees, followed by a reception sponsored by the University and IAMAS.

**2. IAMAS Administrative Meetings in Sapporo**

Two Bureau and 3 Executive Committee meetings, and 2 meetings of the IAMAS Assembly were held to listen to the reports of IAMAS President and SG and the Commission Presidents (see IAMAS Webpage). IAMAS President and SG also attended 3 IUGG-EC meetings of IUGG and 2 General IUGG Assemblies.

Elections: Dr. M. MacCracken, US, as President, Dr. R. Vincent, Australia, as Vice President second term, Prof. Wu Guoxiong, China, as Vice President, Prof. List, Canada, for a last term as SG, and Dr. J. Turner, UK, as Deputy Secretary General. Prof. H. Davies, Switzerland, will serve as Past President. Dr. Len Barrie, International, Prof. I.I. Mokhov, Russia, and Prof. A. Sumi, Japan, re-elected as Member at large, new members at large are Dr. P. Bougeault, France and Dr. V.Ivanovici, Romania.

Thanks go to the retiring EC members: Past President R. Duce, Vice President R. Carbone, Member at large Dr. J.-L. Fellous.

**3. The Effect of Aerosol Pollution in Precipitation**

In May SG attended WMO Cg XIV in Geneva where he addressed Congress on disturbing and mounting evidence of the negative effects of biomass burning and pollution on precipitation. SG then proposed text for a Congress action plan (see IAMAS Webpage). Noting the grave importance for the world and the developing nations in particular, the main decision was to establish a WMO/IUGG body to produce a scientific assessment of the situation, with recommendations for further action.

SG proposed a parallel resolution to IAMAS and IUGG, which was passed in Sapporo in a formulation reached by a IAMAS sub committee and supported by IAHS and IAPSO.

In 2003 SG had two meetings with Dr. E. Manenkova, Director AREP and Dr. L. Barrie of WMO on the Assessment and the steps leading to it, including a IUGG Grant Application for the sponsorship of a meeting (see Webpage). This assessment will be written by a group of experts by the beginning of 2006, i.e. in time for the planning of further actions by WMO Congress XV in 2007.

**4. IAMAS Financial Accounts 2003**

The year 2003 ended with a net loss of \$42986.62, a sum comparable to the grants given for Sapporo. The total assets on 31 Dec. 2003 amounted to \$182503.01.

**5. IAMAS Assembly 2-11 July 2005 in Beijing**

In November, at the invitation of Academician Prof. Guoxiong Wu (VP IAMAS), the Chair of the LOC, and Prof. Li Jianping, both from the Chinese Academy of Science, and Prof. Zheng Guoguang, the Deputy Administrator of the China Meteorological Organization and VP of the LOC, SG familiarized himself with the organization and facilities for IAMAS 2005 in Beijing. All facilities for the 2005 Conference were found to be superb (see IAMAS Webpage). The Scientific Program for Beijing 2005 was also discussed.

**6. Thanks**

The tremendous help and advice by the IUGG SG, Dr. JoAnn Joselyn, is greatly appreciated. So is the support and co-operation of Presidents Prof. H. Davies and Dr. Mike MacCracken and DSG Dr. John Turner. The latter provided welcome relief for SG.

Prof. Roland List, SG IAMAS,  
Web: [www.iamas.org](http://www.iamas.org)

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**Annual Report for 2003**  
**International Association for the Physical Sciences of the Oceans**

The main activity of IAPSO in 2003 was participation in the IUGG General Assembly in Sapporo, Japan. IAPSO convened 6 IAPSO only symposia, and 11 joint symposia. The abstract books for these symposia have been posted on the IAPSO Web page. IAPSO also participated in various symposia led by other Associations, and in Union symposia. Dr. Klaus Wyrtki was presented the Prince Albert I Medal for his contributions to physical oceanography, and the past medalist, Dr. Walter Munk, delivered the Prince Albert I Lecture. The Eugene Lafond medal for the best paper from a developing country was presented to Margarita V. Chikina of Russia.

IAPSO held two Executive Committee meetings in Sapporo and one general business meeting. In addition, Commissions and Working Groups held separate meetings. Elections were held for the new IAPSO Executive Committee, various reports were presented, and planning was initiated for future activities. Because of the decision to hold the next IUGG General Assembly in Perugia, Italy, in 2007, IAPSO changed the location for its 2005 Assembly (previously tentatively planned for Italy) and agreed to join IAG in Cairns Australia in August 2005.

Initial scientific program planning was coordinated with the International Association for Biological Oceanography (IABO) for symposia to be held in Cairns. A number of joint IAG/IAPSO symposia were also agreed upon for the Cairns joint assembly. The IAPSO/SCOR Joint Working Group on Ocean Mixing initiated planning for a Symposium on Ocean Mixing to be held on 11-15 October 2004. Work also was initiated for an IAPSO sponsored workshop, the International Workshop on Forecasting and Data Assimilation in the Benguela and Comparable Systems to be held in Cape Town, South Africa, on 8-11 November 2004. IAPSO agreed to co-sponsor a symposium at the COSPAR meeting to be held in 2004.

Activities continued for Working Groups and Commissions during 2003. A decision was made to discontinue the IAPSO Commission for Cooperation with Developing Countries, as there was a general opinion expressed that the IAPSO Executive Committee is performing this function.

The Past President of IAPSO initiated a free "membership" in IAPSO for interested oceanographers, with a periodic electronic newsletter to those individuals. Material related to IAPSO was made available at the AGU Fall meeting in December 2003. Action was also initiated to create an IAPSO poster, and to have information available at the AGU Ocean Sciences meeting in January 2004 (which IAPSO agreed to co-sponsor). Planning activities have continued on the future of IAPSO. A draft-working document was distributed to IAPSO National Correspondents during 2003.

The IAPSO Secretariat continued updates to the IAPSO Web page, and answered general correspondence.

Fred Camfield SG IAPSO

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## **Annual Report for 2003**

### **International Association of Seismology & Physics of the Earth's Interior**

The 23rd General Assembly of IUGG and the 32nd General Assembly of IASPEI were held at Sapporo, Japan, from 30 June through 11 July 2003. 4,151 scientific participants attended the IUGG General Assembly, 658 of who were affiliated with IASPEI. 7121 abstracts were submitted of which 5137 were presented.

An exciting scientific program highlighted the latest developments in IUGG fields of research, as well as comprehensive summaries of scientific progress since the 1999 General Assembly. A special feature was a series of symposia under the title "State of the Planet: Frontiers and Challenges." These symposia included lectures invited by the President of the IUGG and each of the 7 IUGG Associations. Topics included:

1. Prediction and Predictability;
2. Volatiles in Volcanic Arcs: from slab to stratosphere;
3. Earth Systems and Global Change;
4. Geophysical Risk and Sustainability on a Crowded Planet;
5. Structure and Dynamics of the Earth's;
6. New Sensors of our Planet - What is Possible?

The scientific program also featured a comprehensive and multi-disciplinary program of oral and poster presentations organized by scientists in IUGG, the IUGG Associations (including IASPEI), Studies of the Earth's Deep Interior (SEDI), and the International Lithosphere Program (ILP). Featured symposia on the structure and dynamics of the interior, monitoring and modelling of processes related to prediction research, thermally controlled processes within the Earth, physics and chemistry of Earth's materials, structure and dynamics of Earth's crust/lithosphere, modeling seismic sources, tectonics, earthquake hazard and risk, and education and outreach programs were organized.

#### Asian Seismological Commission

A Business Meeting of the IASPEI Asian Seismological Commission (ASC) was held on 4 July 2003 during the IUGG2003 General Assembly in Sapporo, Japan. Twenty-five participants from 13 countries attended the meeting.

The ASC Pilot Projects Steering Committee introduced the following proposals for pilot projects: Further improvement of the seismic hazard evaluation in developing countries; Seismic risk assessment: regional and local contexts; Seismic risk reduction in the selected most vulnerable urban areas; and Current seismic hazard assessment for early warning and notification.

Plans for the 5th Asian Seismological Commission General Assembly, to be held October 18-21, 2004, at Yerevan, Armenia, were discussed. The scientific program will include the following symposia: Recent Devastating Earthquakes; Earthquake Source Physics: Pre-seismic, Co-seismic and post-seismic phenomena; Stress field, seismotectonic, paleoseismology, focal mechanisms & GPS observations; Strong ground motion, earthquake hazard and risk assessment; Current seismic hazard assessment, early warning, earthquake forecast and predictions; Seismic risk reduction and management; Heatflow, Volcanology, lithosphere, structure of Earth's interior; and Public awareness, education and training - social impacts of strong earthquakes. There is also planned a pre-symposium training course on "Recent Trends in Seismic Networks Data Processing and Exchange, Hazard and Risk Assessment" and a post-symposium field trip.

## European Seismological Commission

A Business Meeting of the IASPEI European Seismological Commission (ESC) was held on 4 July 2003 during the IUGG2003 General Assembly in Sapporo, Japan. Twenty-two participants from 11 countries attended the meeting.

Plans for the 29th Asian Seismological Commission General Assembly, to be held during September 12-17, 2004, at Potsdam, Germany, were discussed. The scientific program will include symposia on:

- Seismicity of the European-Mediterranean Area
- Data Acquisition, Theory and Interpretation
- Earthquake Source Physics
- Crust and Upper Mantle Structure
- Earthquake Prediction Research
- Engineering Seismology
- Rapid Intervention Field Investigation Teams
- Earthquake sources, Hazard and Risk in the Southern Mediterranean: North Africa and Near East
- InSAR and GPS Technology Applications in Monitoring Crustal Deformation
- Education and Outreach

A Young Seismologist Training Course will be held on September 9-12 prior to the Assembly: "Moment Tensor Inversion/a Practical for Beginners"

## Numerical Simulation of Mantle Convection Workshop

8<sup>th</sup> European workshops on numerical modelling of mantle convection and lithospheric dynamics, Castle of Hrubá Skála, Czech Republic, September 13-18, 2003.

The Organising Committee of the workshop consisted of O. Cadek (Charles University, Prague, CZ), A. Spicak (Academy of Sciences, Prague, CZ), Y. Ricard (ENS Lyon, France) and H. Schmeling (Frankfurt University, Germany).

It was the first time that the meeting of this series of European workshops was organised in the former eastern block. Following the tradition established during previous convection meetings, the workshop was designed to bring together senior researchers focussed on modelling lithosphere and mantle dynamics, along with young scientists just entering the field. The programme included a mixture of general scientific discussions and discussions of technical issues related to numerical modelling and interdisciplinary links. The workshop was mainly oriented to basic research but topics related to environmental problems (global warming, sea-level changes) were also addressed. A significant amount of the time was devoted to informal discussions that developed from the invited presentations and the posters. The location, timing and makeup of the posters were designed to optimise discussions within small groups. Besides IASPEI, the workshop was supported by the European Community (project EVG3-CT-2002-0006), SURAO (RAWRA – Radioactive Waste Repository Authority), the Academy of Sciences of the Czech Republic and the French embassy in Prague.

The workshop was attended by 96 participants (Germany 20, France 16, Czech Republic 16, USA 11, Italy 10, the Netherlands 5, Switzerland 4, Canada 3, Hungary 3, Japan 1, Australia 1, Russia 1, UK 1).

Invited speakers included: David Bercovici (Yale, USA), Uli Christensen (Max-Planck-Institute Katlenburg-Lindau, Germany), Nicolas Coltice (Lyon University, France), Anne Davaille (IPGP,

France), Luce Fleitout (ENS Paris, France), Ulli Hansen (University of Muenster, Germany), Edouard Kaminski (IPGP, France), Raffaella Montelli (Princeton, USA), Klaus Regenauer-Lieb (ETH Zurich, Switzerland), Giorgio Spada (University of Urbino, Italy), Tilman Spohn (University of Muenster, Germany) and Paul Tackley (UCLA, USA). The full list of participants, the programme and the abstracts of presented contributions can be found at <http://geo.mff.cuni.cz/workshop>.

The total budget of the meeting was 46,500 EUR. The conference fee was 550 EUR for senior participants and 350 EUR for students. Besides IASPEI (2000 USD), the workshop was supported by the European Community project EVG3-CT-2002-80006 (14,550 EUR), SURAO (RAWRA – Radioactive Waste Repository Authority – 1,000 EUR), the Academy of Sciences of the Czech Republic (500 EUR) and the French embassy in Prague (500 EUR).

### CSS Workshop

The 10th International Symposium on Deep Seismic Profiling of the Continents and their Margins was held in Taupo, New Zealand from the 6th to the 10th January 2003. A post-conference field excursion was held from the 11th to the 14th January 2003. Several international working groups and committee meetings were held after the completion of sessions on the 7th January.

This Commission on Controlled Source Seismology (CCSS) workshop focused on methodological aspects of reflection and refraction seismology as applied to crustal and lithospheric targets. The goal is the development and assessment of improved acquisition, processing, modelling, inversion, integration, and interpretation procedures.

The symposium was co-organised by the Institute of Geological and Nuclear Sciences (IGNS), New Zealand and Geoscience Australia (GA), Australia. The symposium attracted the latest and best results on active source deep seismic imaging from around the world.

The active source research community had indicated at the 9<sup>th</sup> International Symposium in Norway in June 2000 that it would like to investigate possible research links with the passive source research community. At the symposium in New Zealand, this was facilitated through a session on mantle structure convened by Ms Tara Deen, a Postdoctoral Fellow at the GEMOC Key Centre at Macquarie University in Sydney Australia. This initiative allowed the symposium to attract a number of passive source seismologists, many of whom also provided input to papers in other sessions. In summary, there now appears to be a number of case studies in which passive source techniques have been used alongside active source techniques for researching problems that were once addressed by only by active techniques. The presentation of the scientific results to a broad spectrum of the research community, as well as a lively debate on the Tuesday evening on Earthscope and the opportunities it will create for international collaboration, are sure to enhance the cross fertilisation of the scientific disciplines.

One of the outcomes of the demonstrated benefits arising from studies that combine active and passive imaging techniques is that a discussion during the business session on Tuesday night on the succession plans for the Commission on Controlled Source Seismology recognised the importance of passive techniques. The researchers present recommended rolling the activities of CCSS into a new Working Group on Lithospheric Imaging within the Commission on Earth Structure & Geodynamics. The meeting felt that the title indicated a move away from just active (“Controlled Source”) seismology to all forms of seismic imaging.

One hundred and six (106) professionals, from twenty-one (21) countries, attended the conference. Seventy-four (74) oral papers were presented and one hundred and fifteen (115) poster presentations were displayed.

Discussions with Elsevier began before the symposium to arrange for publication of the conference proceedings in Tectonophysics.

The IASPEI/IUGG US\$2000 support was meant for attendees from a developing country to attend this symposium. It was awarded to Zhongjie Zhang, Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, P.R. China, who presented two papers. Mr Zhongjie Zhang was extremely grateful for the award and thanked IASPEI/IUGG for granting the money.

### Activities Involving Developing Countries

IASPEI has at its disposal 48 copies of the International Handbook of Earthquake and Engineering Seismology (Parts A and B) and 103 copies of the IASPEI Manual of Seismological Observatory Practice (Volumes 1 and 2) described below. Free copies of these publications are being distributed to institutional libraries located in less developed countries.

### International Handbook of Earthquake and Engineering Seismology (Parts A and B).

A two-volume comprehensive review of earthquake and engineering seismology is now available. This state-of-the-art work, edited by W.H.K. Lee, H. Kanamori, P.C. Jennings, and C. Kisslinger, fulfils an IASPEI ambition to create a useful reference for earthquake and engineering seismologists, as well as earthquake engineers, geologists, and geophysicists. Part A, which includes a CD-ROM, features 56 full-length chapters detailing the history of seismology, theoretical and observational seismology, earthquake geology and mechanics, and the Earth's structure. Part B features 34 chapters detailing strong-motion seismology, selected topics in earthquake engineering, earthquake prediction and hazards mitigation, and miscellaneous topics, including over 50 national reports and 2 CD-ROMs. Each volume contains about 1,000 pages, printed in top-quality paper (8.5 by 11 inch size with hard cover, and weighs about 3.6 kilograms). For more information, please consult the website "<http://www.academicpress.com/quake>".

### IASPEI Manual of Seismological Observatory Practice (Volumes 1 and 2)

The new Manual, edited by Peter Bormann, outlines in a very consistent way the social and scientific goals as well as the scope, technology, methodology and basic procedures of observatory seismology. It provides the essential scientific and technical fundamentals, reveals their inter-relationship and motivates observatory personnel to do their job as carefully as possible. The Manual is published in two volumes as a loose-leaf collection in two clamp-folders. Volume 1 comprises 13 topically and didactically closely linked chapters. Volume 2 is an annex volume comprising information sheets with a more elaborate treatment of special problems, program descriptions, data sheets and practical exercises related to basic observatory tasks. For more information, please consult "[http://www.seismo.com/msop/msop\\_intro.html](http://www.seismo.com/msop/msop_intro.html)" and "[http://www.gfz-potsdam.de/pb2/pb21/index\\_e.html](http://www.gfz-potsdam.de/pb2/pb21/index_e.html)".

### Working Group on Subduction Zones Located in Developing Countries

A meeting of the IASPEI/IAVCEI Working Group on Subduction Zones Located in Developing Countries was held on 4 July 2003 during the IUGG2003 General Assembly in Sapporo, Japan.

Present were representatives from Indonesia, the Philippines, Nigeria, Argentina, and Germany. Plans for future activities within the Working Group include:

1. Joint research on the seismotectonics of the Mindanao through to the Molucca region;
2. Workshop on subduction zone related topics, in particular regarding earthquake as well as volcanic hazard mitigation in developing countries. This workshop is planned to be held during the joint IASPEI-IAVCEI-IAG-IAGA General Assembly, 2006. However, a pre-workshop on the same topic will be proposed;
3. Meeting of the Working Group representatives from at least three countries during the AGU Fall Meeting 2003 to finalize the proposal for the workshops mentioned above;
4. Establishment of an electronic bulletin board; and
5. Improved communication links through the working group mailing list ([szdc-wg-subscribe@yahoogroups.com](mailto:szdc-wg-subscribe@yahoogroups.com)).

Additional activities include:

1. Seismic tomographic models of subduction zone structures worldwide are available for joint research activities within the Working Group (contact [sriwid@geoph.itb.ac.id](mailto:sriwid@geoph.itb.ac.id));
2. The next working group business meeting is planned to be held during the coming IAVCEI General Assembly, Santiago-Chile, 2004; and
3. Working Group mail list (<http://groups.yahoo.com/group/szdc-wg/>)

#### Publications:

IASPEI Bulk E-Mail System - IASPEI uses this system to broadcast announcements about forthcoming meetings and other information of interest to IASPEI members.

IASPEI Home Page - IASPEI continues development of its Home Page on the World Wide Web, which contains organizational information, a publications list, meeting announcements and Internet connections and other information of interest to IASPEI scientists. The current address for this web site is: <http://www.iaspei.org/>

IASPEI Brochure - The IASPEI Secretariat with the assistance of Carl Kisslinger (Editor) has published a 26 page Brochure entitled "The International Association of Seismology and Physics of the Earth's Interior: Cooperation for Better Understanding of the Earth". Copies can be obtained from the IASPEI Secretariat.

#### Special Projects:

Publication of IUGG 2003 Proceedings of Hazards-Related Symposia and Workshops - Support has been provided for publication of IUGG 2003 proceedings of hazards-related symposia and workshops by the Seismological Press Beijing, China. Now there have been 22 papers submitted to the Proceedings IUGG Special Volume. The submissions in their original form are listed below and can be seen on the SHR website ([http://www.icce.ac.cn/shr\\_iaspei](http://www.icce.ac.cn/shr_iaspei)). The contract with the Seismological Press has been signed, the editing process is starting, and it can be predicted that more submissions are forthcoming.

Dr. Peter Suhadolc Secretary General, IASPEI

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**Annual Report for 2003**  
**International Association of Volcanology & Chemistry of the Earths Interior**

IAVCEI ended the year with over 700 paid individual members. Twenty-six members have chosen to become Life Members, plus three members were awarded Life Membership as Honorary Members in 2003. The IAVCEI web page is frequently revised and updated. The web site URL is [www.iavcei.org](http://www.iavcei.org). The volcano list server administered by Arizona State University remains the official IAVCEI list server. It has >2500 people listed, which far exceeds the IAVCEI membership. Thus we hope to further boost the membership in IAVCEI. Two issues of the newsletter "IAVCEI News" were mailed to members in 2003.

A highlight of the last year was the very successful conference "Cities on Volcanoes 3" in Hilo, Hawaii. Approximately 350 people attended the meeting from July 12-16, 2003. The five-day meeting brought together scientists and multidisciplinary experts from around the globe to discuss many aspects of volcanology with an emphasis on hazards assessment and mitigation. The meeting was organized by representatives of the Commission on Cities on Volcanoes, the University of Hawaii, and others. The meeting consisted of 305 abstracts presented in four theme sessions on Emergency Management, Hazards, Science, and Health. IAVCEI travel grants helped pay expenses for several young scientists or scientists from developing countries.

Another highlight was the IUGG meeting held in Sapporo in June-July. This was the best-attended IUGG General Assembly ever, with 4151 total attendees and 378 from IAVCEI. The amount of money raised for travel assistance from all sources (50 M Japanese yen from the LOC, \$70,000 from the IUGG budget, and additional funds provided by the Associations) exceeded \$630,000, which is the most ever raised for a General Assembly. 67 IAVCEI individuals claimed travel assistance grants. 13 IAVCEI Symposia were convened, and 12 Union Symposia and 59 inter-Associations Symposia. The four Union Lectures, each followed by a Union Symposium, were well attended and have set a high standard for excellence for future General Assemblies. A monograph based on all of the Symposia under the Union theme "State of the Planet: Frontiers and Challenges," is in preparation (Dr. R.S.J. Sparks (IAVCEI), coordinator).

Three outstanding volcanologists were awarded with new IAVCEI Honorary Memberships at Sapporo: Prof Hans-U. Schmincke (Germany), Prof Shigeo Aramaki (Japan), and Dr Robert Tilling (USA).

The next IAVCEI General Assembly has been scheduled for November 14-19, 2004 in Chile. In 2003 the first and second circulars were printed and distributed to all members. Over the next few years, IAVCEI will also focus its efforts on several smaller meetings, including the IAVCEI sponsored "Cities on Volcanoes IV" conference to be held in Quito, Ecuador in January 2006.

The IAVCEI Executive Committee met in Sapporo and conducted a half-day meeting covering many aspects of IAVCEI business.

Officers of IAVCEI for 1999-2003 were:

President: Steve Sparks (UK)  
Vice-Presidents: Joerg Keller (Germany)  
Tadahide Ui (Japan)  
Secretary-General: Steve McNutt (USA)  
Members of  
Executive Committee: Toshitsugu Fujii (Japan)  
Bruce Houghton (NZ)  
Jocelyn McPhie (Australia)  
Hugo Moreno (Chile)  
Raden Sukhar (Indonesia)  
Past President: Grant Heiken (USA)  
Editor, B.V. Tim Druitt (France)

IAVCEI thanks these people for their work during the 4-year term just ended. Certificates of appreciation were awarded in July at the Sapporo IUGG meeting.

A Nominations Committee was formed, chaired by Wally Johnson (Australia) and certified candidates for election to the new IAVCEI Executive Committee. Because the number of nominated candidates exactly equalled the number of slots, no postal vote was necessary. IAVCEI thanks the members of the nominations committee for their work.

Officers of IAVCEI for 2003-2007 are:

President: Oded Navon (Israel)  
Vice-Presidents: Jocelyn McPhie (Australia)  
Toshitsugu Fujii (Japan)  
Secretary-General: Steve McNutt (USA)  
Members of  
Executive Committee: Anita Grunder (USA)  
Renato Solidum (Philippines)  
Hugo Moreno (Chile)  
Jean-Christophe Komorowski (France)  
Past President: Steve Sparks (UK)  
Editor, B.V. John Stix (Canada)

The Commission of Mitigation of Volcanic Disasters has begun a new Atlas series, the first volume of which will cover the Caribbean region and is being prepared under the leadership of Jan Lindsay. The IAVCEI Executive Committee authorized \$4000 to support the first volume of the series in 2002. Draft versions of portions of the first report were prepared in 2003.

The Commission on Subduction Zone Magmatism held a highly successful workshop on the State-of-the-Arct (SOTA) in the Cascades in September 2003. IAVCEI was also a co-sponsor of a Penrose Conference on PLUME IV: Beyond the Plume Hypothesis, held in Iceland in August 2003. The Commission on Explosive Volcanism is continuing to work on compilation of a comprehensive database of all eruptions with volume >10 km<sup>3</sup> for the last 2 million years.

IAVCEI was co-applicant for a 2002 ICSU grant to support training in volcanology for Latin American scientists. The grant provides \$12,000 per year for three years. The first year's funds were spent to support attendance at a workshop on volcanic gases held in Nicaragua in March 2003.

IAVCEI sold several educational products in 2003. Two videos on 1) understanding volcanic hazards and 2) reducing volcanic risk were produced professionally under contract with IAVCEI. Over 70 videos were sold in 2003. Also, a volcano calendar was produced by IAVCEI members and was printed and marketed by a professional calendar company. Over 5,000 calendars were sold and an additional 800 were distributed by IAVCEI to various scientific, educational, and governmental organizations. IAVCEI received a small royalty payment for the calendars.

IAVCEI recognizes that its activities could be significantly expanded by improved fundraising. Towards this end, President Steve Sparks wrote a series of articles on fundraising for IAVCEI News in 2002, and the issues were discussed in detail at the July 2003 meeting of the Executive Committee. Secretary-General Steve McNutt worked with a lawyer and submitted forms for incorporation as a non-profit corporation in fall 2003; the non-profit status was granted in December. After meeting with a consultant, McNutt also submitted a full application for tax-exempt status under section 501(c) 3 with the Internal Revenue Service of the US. The application is being reviewed by IRS and IAVCEI's tax exempt status is pending. This status is important so that contributions may be received with a tax benefit to contributors.

2003 was an unusually active and productive year for IAVCEI. The 1999-2003 Executive Committee completed a strong record of achievement and left the organization in good shape for the 2003-2007 team.

Steve McNutt  
Secretary-General for IAVCEI

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**Annual Report for 2003**  
**IUGG Commission on Geophysical Risk and Sustainability (GeoRisk)**

The GeoRisk Commission, established during the past quadrennium, met during 2003 at the IUGG General Assembly in Sapporo, Japan, and ratified the officers and Association liaisons for 2003-2007 as follows.

<b>Commissioner</b>	<b>Association</b>	<b>e-mail address</b>
Tom Beer	Chair	Tom.Beer@csiro.au
Alik Ismail-Zadeh	Vice-chair	aismail@mitp.ru
Hermann Drewes	IAG	drewes@dfgi.badw.de
Kosuke Heki	IAG	Heki@miz.nao.ac.jp
Susan McLean	IAGA	Susan.Mclean@noaa.gov
Kuni Takeuchi	IAHS & Vice-chair	takeuchi @yamanashi.ac.jp
Gerd Tetzlaff	IAMAS	tetzlaff@rz.uni-leipzig.de
Evgeny Kontar	IAPSO	ekontar@ocean.fsu.edu
Ramesh P. Singh	IAPSO	ramesh@iitk.ac.in
Zhongliang Wu	IASPEI	wuzhl@gscas.ac.cn
Volodya Kossobokov	IASPEI	volodya@mitp.ru
Grant Heiken	IAVCEI & Secretary	heiken@whidbey.com
Uri Shamir	IUGG	shamir@tx.technion.ac.il
Harsh Gupta	IUGG	harshgupta@nic.in
Paula Dunbar	Treasurer	Paula.Dunbar@noaa.gov
Slava Gusiakov	Tsunami Commission	gvk@omzg.ssc.ru

During the General Assembly, the Commission convened two sessions. One of these was an invited session that formed part of the “State of the Planet” theme. Papers from this session are to be published by AGU as a Geophysical Monograph.

A special highlight of 2003 was publication of “Risk Science and Sustainability (Science for Reduction of Risk and Sustainable Development of Society)” edited by Tom Beer and Alik Ismail-Zadeh. Published by Kluwer Academic Publishers as NATO Science Series II (Mathematics, Physics and Chemistry) Volume 112 in August 2003, it contains the proceedings of the 2002 Budapest Meeting, including the final agreed version of the Budapest Manifesto that can also be found on the web at [www.iugg.org/budapest.pdf](http://www.iugg.org/budapest.pdf)

The commission has been involved with two ICSU initiatives during the past year, the Dark Nature Proposal and Near Earth Orbit Objects

The GeoRisk Commission supported the Dark Nature proposal by IUGS, led by Prof. Suzanne Leroy of Brunel University, to study past natural catastrophes. A planning meeting in Paris was attended by Vice-Chair Alik Ismail-Zadeh at which it was believed that agreement was reached for the webcyclopedia to be the publication venue for the results of the project. In subsequent correspondence Prof. Leroy denied any such agreement and has indicated that there is no scope for interaction with IUGG on this project.

Near Earth Orbit Objects is a project led by the International Astronomical Union. Dr Slava Gusiakov attended a planning meeting on this project as an expert on tsunamis, and was subsequently selected to participate in the initiative.

The **webcyclopedia** at <http://www.mitp.ru/georisk/webcyclopedia/index.html> continues to collate information. The presentations given at the Sapporo Assembly are to be incorporated into the webcyclopedia. The commission continues to search for an editor for the project.

Plans for 2004 include two meetings and participation in a GeoUnions Initiative.

Hazards 2004 is the name given to the combined meeting that constitutes the Third Workshop of the IUGG Commission on Geophysical Risk and Sustainability & the Tenth International Symposium on Natural and Human-Induced Hazards of the Natural Hazards Society. The meeting will be held in Hyderabad, India 2-4 December 2004. A web page for the meeting has been set up at [www.hazards2004.org](http://www.hazards2004.org)

Following the successful collaboration at the Budapest meeting, the GeoRisk Commission will again arrange a symposium at the EuroScience meeting in Stockholm in August 2004. Professor G. Papadopoulos has been invited to deliver a Rammal Award lecture at the symposium on Risk Science, Society and Sustainability

The GeoSciences Unions of ICSU (namely IGU, IUGS, IUSS, IUGG) met in Paris in February 2004 and determined five topics for collaborative further action. One of these topics is Hazards, and IUGG agreed to lead action on this topic. The Chair of the GeoRisk Commission has been asked to coordinate action on this. It is to be hoped that the Collaborative Hazards Action Team will meet during the Hyderabad meeting of the Commission.

Tom Beer, Chair of the GeoRisk Commission

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