



# Annual Report 2012

International Union of Geological Sciences

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## 2012 Highlights

The 2012 Annual Report of the International Union of Geological Sciences (IUGS) covers the period between 63<sup>th</sup> IUGS Executive Committee Meeting in Sebastian, Spain (14-17 February, 2012) and IUGS Executive Committee of 66<sup>th</sup> Meeting Paris, France (19 - 22 February 2013).

Highlights of the Year include:

- The 34<sup>th</sup> International Geological Congress (IGC) was held in Brisbane, 5-11 August 2012. It was highly successful, attracting six thousand delegates.
- The 64<sup>th</sup> and 65<sup>th</sup> Meetings of the IUGS Executive Committee were held in association with the 34<sup>th</sup> IGC, on 4 and 11 August, respectively.
- The 3<sup>rd</sup> Meeting of the merged IUGS-IGC Council was held during the IGC, on 5 and 9 August. Council approved the new IUGS' Executive, a new Strategic Plan and Delhi as the host city for the 36<sup>th</sup> IGC in 2020.
- A new publications Committee, chaired by Brian Marker, held its first meeting in conjunction with the 66<sup>th</sup> Executive Meeting in Paris.
- The Netherlands rejoined IUGS, with TNO as the Adhering Organisation.
- President Roland Oberhänsli held discussions with UNESCO Assistant Director General, Gretchen Kalonji, on future collaboration, including on Global Geoparks and strengthening relationships.
- Ad hoc Review Committee (ARC) evaluations were conducted for the joint IUGS-UNESCO programs, International Geoscience Program (IGCP) and Geoscience Applications of Remote Sensing (GARS). These involved Vice Presidents Yildirim Dilek (chair) and Marko Komac, as well as Past Secretary General, Peter Bobrowsky.

## Governing the Union

The **Council**, which is the highest body of IUGS, meets every four years at the IUGS main scientific forum, the International Geological Congress (IGC). It comprises representatives appointed by the Adhering Organizations of the active IUGS member countries/regions, with the number of representatives reflecting the financial category of membership. Council decides the direction the Union shall take in the subsequent four years and votes to elect a new Executive Committee and to decide on the host region for the next available session of the International Geological Congress. Countries which are not IUGS members or are inactive may send an observer (without voting rights) to Council meetings.

The **Executive Committee** comprises the ten Executive Officers of IUGS: President, Secretary-General and Treasurer, the Past-President, two Vice-Presidents and four Councillors. (In January 2013, Past-President Prof. Alberto Riccardi resigned for personal reasons, reducing the current Executive to nine). The officers play an active role in running the Union, developing new science programmes, representing the best interests of the Union at congresses and elsewhere, preparing the electronic bulletin and acting on both standing and ad-hoc committees.

Day-to-day decisions and responsibilities rest with the **Bureau**, comprising the President, Secretary General and Treasurer; these officers meet as required throughout the year to address the progress of the various matters of concern and interest to the Union.



## Strategic Plan 2012

### A Mission Redefined

The IUGS Executive appointed Attilio Boriani (Italy, Chair), Jacques Charvet (France), Peter J. Cook (Australia), Umberto G. Cordani (Brazil), Stan C. Finney (US), Ochir Gerel (Mongolia), Gary Lewis (US) as members of the Strategic Planning Committee (SPC) in 2009. At its meeting IUGS-IGC Council approved the plan<sup>1</sup>.

The SPC recommended IUGS objectives should be to:

- Produce authoritative scientific standards.
- Contribute to Earth science education and the advancement of public understanding of the Geosciences and their significance in solving societal problems.
- Serve as an authoritative international scientific union addressing global issues that involve the Geosciences.
- Represent the geological sciences in governmental and non-governmental forums to inform, advise, and influence public policy and decision-makers.
- Geoscience aimed at understanding the global Earth system, and applied Earth science that uses the developing understanding of the Earth system to address problems of particular relevance to the welfare of the Earth's human population.
- Encourage and support new original ideas in basic and applied geological research by means of the creation of ad hoc Task Groups, Commissions, or different adequate bodies.
- Enhance the visibility of the Geosciences and demonstrate their profound influence in planning for rehabilitation and preservation of the future planetary environment by seeking greater involvement in public affairs and by publicizing the critical role that only the Geosciences can play.
- Foster collaboration between developed and developing countries in Earth science research, capacity building, and applications.
- Encourage, in cooperation with other organizations, more interdisciplinary involvement within the broad spectrum of the geosciences in developing solutions to global problems.
- Improve its presence in ICSU activities

SPC also presented 23 recommendations on strategic issues of different types, and summarized these in stating:

*"Opportunities abound for the IUGS to make enormous contributions to strengthening the role of the Earth sciences in public affairs, especially in developing countries. The need is critical because the expanding world population will place inordinate demands on mineral, water, and land resources and potentially contribute significantly to environmental degradation. The Earth sciences are in a unique position to illuminate the growing public debate about policy issues related to developing resources, minimizing environmental damage, and mitigating geological hazards, and thus the Earth sciences can help society to make wise decisions."*

## IUGS Bureau Reports

### IUGS President (August 2008-August 2012) Alberto Riccardi

During the period covered by this report, i.e. year 2012 and beginning of 2013, I acted as IUGS President until August 9, 2012, and afterwards as IUGS Past President until my resignation on January 13, 2013.

<sup>1</sup> [http://iugs.org/uploads/IUGS\\_2012\\_Strategic\\_Plan.pdf](http://iugs.org/uploads/IUGS_2012_Strategic_Plan.pdf)



As done for 2009, 2010, and 2011 one of my main concerns as IUGS President, until August 9th, 2012, was to improve interaction with IUGS National Committees, as well as with other bodies and organizations working inside and outside IUGS to address as efficiently as possible all earth science issues of relevance to society. Thus, personal letters were sent to all IUGS bodies, including Commissions, Task Groups, National Committees, Affiliate Organizations and joint programs, with regard to specific issues of the 2011 reports and stressing the need to develop multilateral cooperation among all these groups, to contribute to the journal Episodes and to provide a logo and link to the IUGS website.

In connection with IUGS activities the following actions were taken: a) arrangements to establish the terms of a MOU between IUGS and China to relocate the IUGS Secretariat in Beijing for the period 2012-2020, which was signed on August 6, 2012, at the 34th IGC in Brisbane, Australia; b) arrangements to establish the terms of a MOU between IUGS and the organizers of the 35th IGC (Cape Town, South Africa, 2016), which was signed on August 4, 2012, at the 34th IGC in Brisbane, Australia; c) arrangements to establish the terms of a new MOU between the IUGS and the Geological Society of India to renew for another four years (2012-2016) the agreement under which the Geological Society of India publishes the IUGS journal Episodes, which was signed on August 2012, at the 34th IGC in Brisbane, Australia; d) publication of two Editorials in Episodes (35, 2), one to clarify IUGS position in relation to geological standards and conventions, and another one to summarize the main IUGS activities and accomplishments during my tenure as IUGS President (2008-2012); e) contribution to the preparation and publication of the final version of the IUGS 2011 Annual Report and the Minutes of the 63rd EC Meeting (San Sebastian, 14-17 February 2012); f) input with regard to changes in the Statutes to the Statutes Committee, and on the Strategic Plan to the Strategic Planning Committee, and supervision of the publication of the final version of the Strategic Plan for distribution, after its approval by the IUGS Council, at the 34th IGC; g) support to the establishment of a new Task Group on Heritage Stone (HSTG); h) interaction with the IUGS Commission on Stratigraphy on several matters, and participation in the dedication ceremony of the Lutetian GSSP in Gorrondaxte on 13th February 2012; i) organization, edition of programme, and supervision of the IUGS Awards Ceremony at the 34th IGC, where several new awards were presented, besides the existing James Harrison Award and the Hutchinson Fund Awards (the third time to be presented after the years 2000 and 2004), i.e. the IUGS Scientific Awards of Excellence, the Episodes Best Paper Award, and IUGS 50th Anniversary – Young Scientists Essay Contest Award; j) opening speech representing the IUGS during the celebration of the IGCP 40th anniversary in Paris on 21st February 2012 and, as an aftermath, circulation of letters of thanks and appreciation to all those that were present at the event or sent their congratulations; k) in relation to the International Geological Congress Committee (IGCC) involvement in the bid process for the 36th IGC in 2020 and in the meeting of the International Geological Congress Committee (IGCC) in Brisbane, on August 4th, 2012; l) involvement in preparing the 64th EC meeting (4 August 2012, Brisbane, Australia), the meeting of the IUGS Bureau (3 August 2012), IUGS-IGC Council meeting (5 and 9 August 2012) and IUGS exhibitions and overall participation in the 34th IGC (Brisbane, 2012); m) organization and chairing of a meeting of the IUGS Executive Committee with Representatives of the Affiliated Organizations on August 7, 2012, at the 34th IGC (Brisbane, Australia); n) publication, through the IUGS E-Bulletin and Website, of a Position Statement submitted, as IUGS President, to the United Nations Conference on Sustainable Development (UNCSD) or Earth Summit Rio+20, to promote the geoscientific research and knowledge that is needed to achieve a safer, more equitable, cleaner, greener and more prosperous world for all; o) compilation, edition and printing supervision of the “IUGS Book of Facts, 1961-2011” for distribution to the IUGS-IGC Council at the 34th IGC, Brisbane, Australia, August 2012; p) contribution to prepare the final draft of the Minutes of the 64th EC meeting (Brisbane, August 4, 2012) and of the Third Ordinary Session of the IUGS-IGC Council (Brisbane, August 5 and 9, 2012).

With regard to ICSU, as in previous years I acted as liaison with the ICSU RO for Latin America and the Caribbean, and I participated in a number of activities proposed by this organization, one of them resulting in IUGS incorporation as an Associate Member of the ICSU World Data System (WDS).

Various meetings were held with Unesco in February 2012 with several officers of the Division of Ecological and Earth Sciences and the Natural Sciences Sector. Main goals of these meetings were to reinforce existing joint initiatives, such as the International Geosciences Program (IGCP), the Geological Applications of Remote Sensing (GARS), the Geoparks initiative, and to promote coordination of activities in relation to UNESCO's Earth Sciences Education Initiative in Africa. Outstanding events in which I participated were the celebration of the IGCP 40th Anniversary and the publication of the book ""Tales Set in Stone, 40 Years of the International Geoscience Programme (IGCP)", which traces the main achievements of this IUGS-UNESCO programme of international scientific cooperation at the service of society. In addition I acted as liaison with the UNESCO RO for Latin America and the Caribbean, and supported actively the promotion of Geoparks in the region.

In relation to the Group on Earth Observations (GEO), I was involved, as IUGS Leading Representative, in a number of activities in order to support GEO's work, among them nomination of a IUGS representative to the "Post-2015 Working Group", the acceptance of a "List of Datasets for the GEOSS Data-CORE", and in organizing a "GEOSS Science and Technology Stakeholder Workshop" (Bonn, 2012). I was also involved in the activities of One Geology, as member of the OneGeology Steering Group, specifically with regard to the establishment of the OneGeology Web Services Accreditation Scheme, and on a list of Intellectual Property Rights and Assets to be assigned to the new corporation OneGeology Limited.

From August 9, 2012 until January 13, 2012, acting as IUGS Past President, I provided, as requested, background information to the new IUGS President, Bureau and Executive Committee. Thus I sent (21, 24 August, 2012) a summary of pending issues to be considered by the new EC, I circulated (September 14, 2012) comments to a "IUGS Executive Committee Reference Manual" prepared by Ian Lambert, I provided (October 13, 2012, 30 November 2012, 8 January 2013, respectively) background information and comments on "IUGS and Geoparks", on "IGCP and GARS on-site review schedule and process", and on "IUGS GEO representation" and GEO/GEOSS Post 2015 Strategy Working Group".

During 2012 I also chaired the Argentinean Commission on Stratigraphy, that is currently completing the National Stratigraphic Lexicon, participated as an adviser to the Argentinean Government on mapping activities of the Argentinean Geological Survey and on the Argentinean proposal on the continental shelf under the United Nations convention on the Law of the Sea, and served as Professor and Head of a Natural Sciences Museum Division at La Plata National University, Argentina.

## **IUGS President (from 9 August 2012): Roland Oberhänsli**

After my teaching requirements decreased in October 2012, I was able to fully engage in IUGS business. With the new Secretary General Ian Lambert), I gave priority to gathering background information on pending businesses, with the help of the previous President (Alberto Riccardi) and Secretary General (Peter Bobrowsky)

Major events & actions from September 2012:

- Sent letters and medals to outgoing EC acknowledging service for IUGS
- Signed new contract with UNESCO for the International Geoscience Program (IGCP)
- Revised UNESCO's draft terms of reference the geopark initiative, with an enhanced role for IUGS.
- Met with senior UNESCO staff, Ms. Gretchen Kalonji, Patrick McKeever and Margaret Patzak, to discuss IUGS role in geoparks, as well as Ad Hoc Reviews planned for the current joint IUGS-UNESCO initiatives - IGCP and Geoscience Applied to Remote Sensing (GARS).
- Contacts with different members of commission, task groups and affiliate organisations
- Appointment of Brian Marker as new chair of PC -
- Welcome address at the 24th GSAf meeting (40th Anniversary) in Addis Abeba
- Resignation of Alberto Riccardi – acknowledgement of his service in IUGS
- Change in EPISODES editorial bureau – acknowledgment of M. Jyanandas service and GSI to IUGS and welcoming of Farududdin

- Invitation to the Meeting of EuroGeoSurveys to present future developments in IUGS
- Presidential address in EPISODES, which emphasised my intention to guide IUGS from the era of System Earth studies towards the era of Future Earth studies. I suggested the pertinent topics that we must address are:
  - energy & resources
  - resilience of ecosystems
  - waste management
  - hazards & climatic changes
  - geo-governance

Therefore we must focus on fundamental processes changing our planet and examine access to raw materials and mitigation of geo-hazards. Discourse with society is the great challenge. Access to alternative energy, exploration of raw materials, water and sewage management, climate change, ecosystem services, mitigation of hazards - earthquakes, tsunamis, landslides and storms - or waste management all ultimately rely on processes or actions that show extremely variable recurrence times that are difficult to convey politically or socio-economically. Changes in the kinetics of geo-processes and the extreme variability of time scales on which they occur are keys for understanding our Earth in Transition and preparing for the unpredictable. This will be the future challenge.

As a consequence IUGS should develop new opportunities for new networks focussing on the above topics especially energy & resources and education towards geo-governance. Scientific pastures new can only be reached by teamwork, thus keeping our identity and base in Geoscience IUGS should seek closer cooperation with other unions and take a more active rank in ICSU and major scientific lead organisations.

Regarding pending issues, IUGS still has to cope with its new strategic plan prepared by the outgoing committee and to prepare for its future. Modalities to end initiatives and to generate possibilities for new challenges must be developed.

#### **Secretary General (from 9 August 2012): Ian Lambert**

The IUGS Executive Committee was elected by Council at the 34th IGC in Brisbane, August 2012. Councillors Wesley Hill and Sampat Tandon continued through 2012 as did Past Secretary General Peter Bobrowsky (through 2013). The resignation of Past President Alberto Riccardi, in January 2013, further decreased to corporate memory of the Executive. I gave priority to preparing a comprehensive Reference Manual, to bring together important information that needs to be readily accessible to new EC Members, including pending business, issues to be dealt with, and their responsibilities.

China's increased involvement in IUGS is an important and welcome development. In December, the USGS Secretariat, comprising Richard Calnan and Nancy Zeigler, which had worked very effectively over the term of the last EC, handed over to the new long-term Secretariat office within the Chinese Academy of Geological Sciences. The Beijing office was opened in December 2012 and is staffed by 7 officers (several part-time), led by Li Zhijian.

I conducted initial scoping, with President Roland Oberhaensli and Treasurer, Dong Shuwen, of a new initiative addressing the challenges involved in meeting the needs of future generations for natural resources, that was a recommendation in the IUGS' Strategic Planning Committee (SPC). It was decided that the Strategic Planning Committee should be replaced by a New Activities Strategic Implementation Committee (NASIC), a largely external group which will scope this initiative through 2013.

The Secretary General and Councillor Yujiro Ogawa initiated work on an IUGS sponsored international workshop on natural hazards in association with the G-EVER meeting (in Sendai, October 2013).

Planning commenced for a significant IUGS presence at the GSA Annual Assembly in Denver in late October, including holding a Bureau meeting and applying for a Pardee Keynote Symposium on the challenges in



Resourcing Future Generations, arranging interactions with Affiliated Organizations.

I had a paper accepted by Episodes on Scientific Advice Underpinning Decisions on Major Challenges.

## **Dong Shuwen (from Aug. 2012): Dong Shuwen**

During 2012, IUGS income was USD\$38,406 less than expenditure.

Membership fees from Adhering Organizations and contributions from UNESCO to IGCP programs constitute most of the income of IUGS. There are total 120 Adhering Organizations: 86 active (6 pending), 34 inactive. In 2012, Netherland withdrew their membership, and Gambia paid their membership from 2010-2012, thus reinstated to Active Status. The membership fees of 2012 were USD\$65,853.20 less than those of 2011 due to some adhering organizations being unable to make payments during the sluggish global economy.

### **2005-2012 membership trends**

Active	Inactive	Total
86 in 2012	34 in 2012	120 in 2012
86 in 2011	35 in 2011	121 in 2011
87 in 2010	34 in 2010	121 in 2010
94 in 2009	27 in 2009	121 in 2009
94 in 2008	25 in 2008	119 in 2008
88 in 2007	30 in 2007	118 in 2007
83 in 2006	35 in 2006	118 in 2006
77 in 2005	40 in 2005	117 in 2005

Other income during 2012 included the publication royalties from Geological Society of London, bank and Investment interests.

The actual expenditure of 2012 experienced a year-on-year increase of USD\$89,269.36, mostly related to expenditure related to the 34th IGC and the IGCP 40th celebration.

## International Geological Congress

**Scientific forum for IUGS: 34<sup>th</sup> IGC – Brisbane Australia 2012**

**President, Dr. Neil Williams and Secretary General, Ian Lambert**

The 34th session of the IGC, which was held in Brisbane, from 5-10 August, 2012, was the second to be hosted in Australia – the 25th was held in Sydney in August 1976.

The 34th IGC was a partnership between Australia and New Zealand, on behalf of the Oceania region. It represented the end point of some 9 years of planning, organisation and management. Many individuals and organisations made very substantial contributions to the project and the successful end product is due to their combined efforts.



### Key facts and figures for 34th IGC:

- Attracted 6012 delegates from 123 countries, with the largest contingent (2249) from Australia, followed by China (978);
- 3712 oral presentations, requiring up to 35 concurrent sessions on each of the 5 days of the scientific program.
- In addition
- 13 Plenary presentations;
- 1469 poster presentations, with the posters changed each of the first four evenings;
- 332 delegates participated in 22 pre- and post-Congress field trips, and 247 delegates participated in 8 single day trips;
- Approximately A\$1.7 Million was spent on the GeoHost support program, which provided: Full support for 150 delegates; Partial support (mostly free registration plus A\$1500) for another 150 delegates; IUGS Executive members were given free registrations, welcoming reception and dinner tickets, and accommodation for 3 nights;
- Approximately 200 other delegates given free or reduced registration in return for services rendered or because they were non-working retirees;
- 75 business meetings;
- Cash sponsorship exceeded A\$ 1 Million;
- The GeoExpo attracted some 140 exhibitors occupying 291 booths and 15,500 square metres;
- Over \$750,000 in total was spent on congress promotion;
- The first IGC to:
  - be held over a shortened duration of 5 days;
  - have all Circulars published exclusively in electronic form;
  - host a Young Earth Scientists (YES) international conference within the IGC program;
  - formally take into account the fact that Ramadan fell during the congress dates and to make appropriate arrangements for Muslim delegates;
  - have a majority representation from new-world countries;
  - have a major focus on the private sector – this resulted in the largest number of Australian geoscientists ever at a scientific meeting;
  - attract the strong interest of global politicians and leaders in the work of geologists, as demonstrated by the first ever IGC International Resource Ministers Forum and the number

of international Ministers and Ambassadors that attended the congress.

*See Appendix 7 for the Official Delegate List to the 3<sup>rd</sup> Joint IUGS IGC Council.*

## **35<sup>th</sup> IGC 2016 – Capetown update**

The South African Minister of the Department of Mineral resources gave an address at the closing of the 34<sup>th</sup> IGC in Brisbane and the “Presidents Cup” was passed on to South Africa. The 35th IGC Foundation has been formed, to act as Legal Entity, and a PCO has been selected. Organizers anticipate good cooperation with African Surveys and Societies as this will be international congress for all African geologists to promote geoscience and science on the entire continent. The Council for Geoscience formally transferred responsibility for the 35th IGC to the Foundation, support of 5 million rand was pledged, and 3 CGS staff members were transferred to the Foundation. At the time of reporting, sponsorship constituted 17.5% of the total revenue budgeted. Geoheritage will be an important theme at the Congress, and organizers envisage publishing a volume on the Geoheritage in Africa. Therefore, the committee hoped to see several Global Geopark(s) in Africa registered by 2016.

## **36<sup>th</sup> IGC 2016 – Dehli update**

The 3rd Joint IUGS-IGC Council voted to award of IGC 2020 to India (Dehli): Feb. 23-29, 2020. The Prime Minister of India will be invited to be the patron of event and a meeting with the Presidents of the National Academies was held in Delhi during the “Summit of South Asian Academies” September 2012 where full cooperation was assured by each country representative. At a follow up meeting held on October at Sri Lanka Academy of Sciences, participating countries were invited to appoint sub-committees to plan and organize field trips and to take appropriate steps to obtain funding from their governments. The Ministry of Earth Sciences would provide space for the IGC 2020 Secretariat and would soon be launched.

## **Permanent Secretariat**

The Secretariat is important for the day-to-day operations of the IUGS. Until December 2012, the Permanent Secretariat was generously funded by the United States Government and based at the Headquarters of the U.S. Geological Survey, in Reston, Virginia. IUGS now has an eight-year agreement with the Ministry of Land and Resources (MLR-China) to host the Secretariat. With full financial support from the MLR and the backing of the Chinese Academy of Geological Sciences (CAGS), the new Office of the IUGS Secretariat began operations December 2012. An Opening Ceremony was held at Ministry of Land and Resources, and was attended by officers of the Ministry and IUGS President Roland Oberhaensli and Secretary General Ian Lambert. The opportunity was taken to hold a Bureau meeting in the Beijing Secretariat office.



## IUGS Awards

The IUGS Awards Ceremony, which was held at the 34th IGC, recognised the worthy contributions of individuals, as follows:

<b>James Harrison Outstanding Achievement Award</b>	<i>Edward Derbyshire</i>
<b>IUGS 50th Anniversary – Young Scientist Essay Contest Award</b>	<i>Gemma Jeannette Venhuizen</i>
<b>2012 Hutchison Fund Awards</b>	<i>Tandis S Bidgoli, Shaena Montanari, Tiffany Rivera, Danielle Thomson, Wang Shuhong, Sandow M. Yidana</i>
<b>IUGS 2011 Episodes Best Paper Award*</b>	<i>Wojciech Chelmicki, Powel Jokiel, Zdzisław Michalczyk, Z., and Piotr Moniewski</i>
<b>IUGS Science Excellence Award 2012 in Environmental Geology*</b>	<i>Ibrahim bin Komoo</i>
<b>IUGS Science Excellence Award 2012 in Geological Education*</b>	<i>John L. Laxton</i>
<b>IUGS Science Excellence Awards 2012: Vladimir. V. Tikhomirov History of Geology Award*</b>	<i>Hugh S. Torrens</i>
<b>IUGS Science Excellence Awards 2012: Digby McLaren Stratigraphy Award</b>	<i>Stig M Bergstrom</i>
<b>IUGS Science Excellence Award 2012 in Structural Geology*</b>	<i>John G. Ramsay</i>

\*New Award in 2012

## Scientific Activities of IUGS

In 2012 the Union continued its scientific activities through its Commissions, Task Groups and Initiatives. IUGS is also active with UNESCO, through IGCP and in the Geological Applications of Remote Sensing (GARS) and the Global Geoparks Network. IUGS also collaborates with the IUGG in the International Lithosphere Programme (ILP). For these programmes, IUGS provides both financial support and/or suggestions for scientific directions. The results of these research activities are not only widely published, but also form a major part of the programme at the quadrennial IGC.

### Commission for Geological Education, Training and Technology Transfer (COGE)

<http://www.iugscoge.com/>

In 2012 plans began for new activities that further the group's objectives within global geo-education: identifying gaps, coordination and development of new programmes, organizing meetings, and identifying gaps in the teaching material and textbooks. "GeoEra Education Roadmap" project (GEO-ERA) has been developed in collaboration with the Geological Society of Africa (GSA) to provide the entire African continent with a roadmap that will serve to advance geoscience education, training and technology transfer. Integral to the success of the plan is coordinated development of school-level geoscience educational solutions by teams of countries. Please see the 2012 *EPISODES* article "The need for a geoscience education roadmap for Africa." During the 34<sup>th</sup> IGC, COGE was responsible for two symposia: "Geoscience Education" and "Developing geoscience education and awareness for the benefit of society." Following COGE's suggestion, IUGS presented Professor Nir Orion (Israel) with the IUGS Award for his outstanding contribution to Geoscience education.

### Commission for Geoscience in Environmental Management (GEM)

<http://www.iugs-gem.org>

In 2012, the GEM continued to pursue its goal of knowledge creation and problem solving in relation to sustainability and environment. Six Working Groups continue on the topics of: 1) Land Subsidence and Groundwater 2) Drinking water 3) Dust 4) Gold and mercury 5) Climate Change Adaptation and 6) Man-made Strata and Geo-pollution. The Working Group on Communicating Environmental Geosciences ended and replaced by a group on Natural Hazards in Relation to Territorial Sustainability (Adriana Níz, Chair). In 2012, business meetings were held in Bangkok (February) and Brisbane (August). Publications included two books on Climate Change Adaptation and a paper in *EPISODES* on Man-made Strata and Geo-pollution. At EGU, GEM led a session on Communicating Environmental Geosciences and in Brisbane contributed to two sessions.

### Commission on the Management and Application of Geoscience Information (CGI)

<http://www.cgi-iugs.org>

This group continues to be successful in providing the means for transferring knowledge on geoscience information and systems; to stimulate international dissemination of best practice in geoscience information; to support initiatives that develop standards; to establish an accepted position in the international geoscience information community; and, represent IUGS on geoscience information matters. In 2012, CGI continued to develop Geoscience ML (GeoSciML), a database operation language used by the global OneGeology project and the past European EC project OneGeology-Europe, which makes geological data interoperable and accessible via web portals. Discussions at the CGI Council in Brisbane included the sustainability of CGI vocabularies, CGI's participation in the OGC, CGI's role within the data, and specifications of the European



INSPIRE Directive. Long-term members of the Council met (Ian Jackson - Secretary General, Koji Wakita, Bruce Simons, Australia, John Broome) and new members started their work after the Council meeting (Robert Tomas -Treasurer, Michael Frame, Richard Hughes, Kazuhiro Miyazaki, and Oliver Raymond).

## **International Commission on the History of Geological Sciences (INHIGEO)**

<http://www.inhigeo.org>

The two main objectives of the Commission: 1) the promotion of studies on the history of geological disciplines in an international context and 2) the encouragement of national and regional organizations that have the same purpose. To meet these objectives, the Commission annually holds a conference and prepares newsletters, quarterly circulars, and other publications (including IUGS Journal *Episodes*). Current INHIGEO issues and challenges include implementation of new byelaws, adopted in August 2012 and accommodating a growing membership as (restriction removed of 11 members per country rule). INHIGEO Conference venues for 2014 – 2018 have been established: California, USA (2014); Beijing, China (2015); Cape Town, South Africa (2016); Yerevan, Armenia (2017) and Mexico City, and Mexico (2018). Upcoming INHIGEO activities in 2013 include an annual conference - 22-28 July 2013, Manchester UK, in association with the 24th International Congress for History of Science, Technology & Medicine.

## **Tectonics and Structural Geology (TecTask)**

<http://www.tectask.org>

In 2012, Tectask membership broadened to cover 71 countries. Officers continued to develop the websites *Outcropedia* (Passchier et al. 2009) and *Glacier Watch* (Mancktelow & Pennacchioni, 2011), along with its central portal *tecktask.org*. Manuel Sintubin confirmed that "Outcropedia" will also include crucial and possibly threatened geological outcrops. Outcropedia uses 3D imaging and has been integrated with OneGeology and the GSSP database established by the International Commission on Stratigraphy. *Glacier Watch* gives an overview of recently exposed geological structures, which after exposure are likely to rapidly deteriorate, due to surface weathering, lichen growth, mechanical damage and accumulation of sediment cover. Other activities include Geo-Heritage, which helps raise aware of the problem of Geo-vandalism, and Standards and Terminology within structural geology. Activities in capacity building (Short Courses, field trainings, workshops) continued throughout 2012 providing financial support when most needed.

## **International Commission on Stratigraphy (ICS)**

<http://www.stratigraphy.org>

ICS is charged with the complex task of establishing global stratotype sections and points (GSSPs) for the complete Earth's history. ICS comprises fourteen Subcommissions that determine where to fix the GSSPs defining the base of the Systems, Series and Stages (and thus the boundaries between) in the geological time-scale that comprise the stratigraphic column. In 2012 the current ICS executive officers were re-elected and two new subcommissions, Ediacaran and Cryogenian, replaced the subcommission on Neoproterozoic. The GSSP for the base of the Santonian Stage (Upper Cretaceous Series) was ratified and GSSP for Toarcian Stage (Lower Jurassic Series) was proposed. The 2012 edition of the International Chronostratigraphic Chart/Geologic Time Scale was distributed to all participants of the 34th IGC. Online archives for the ICS Chronostratigraphic Chart and Table of GSSPs, the global geostandards, were developed by ICS, were incorporated in the online thesaurus of the IUGS Commission, CGI. The continuously updated ICS website contains the latest January 2013 version of the ICS Chart and updated Table of GSSPs. In Brisbane, the ICS led a workshop and sessions. Media interest in the "Anthropocene" kept the Chairman busy responding to interview requests. Commission members have considered developing iPhone and Android apps for ICS charts, which are currently being developed and sold by 3<sup>rd</sup> parties.



**Task Group on Geoheritage (TGG)**

<http://geoheritage-iugs.mnhn.fr>

The Task Group has three main objectives: 1) to develop an inventory of geoheritage sites, with a list and Three main objectives of the task group have been to develop an inventory of geoheritage sites; to compile the regulations on trade of ex-situ objects existing in different countries on a website; and, to provide a single point of reference and coordination for the current diverse and disparate activities in geoheritage being undertaken by the IUGS family. GTG leaders attended various meetings in 2012, including Montceau-les-Mines Lagerstätte & Autunien stratotype (20-21 September 2012), the meeting IUGS-ProGEO Geoheritage: Protecting and Sharing (24-28 September, Bari, Italy), Forum “Geoheritage, Geoconservation & Geotourism” (15 November, Brussel). In addition, GTG was a member of the organizing committee of the Arouca 11TH European Geoparks Conference Portugal 19-21 September.

**Task Group on Global Geochemical Baselines (TGGGB)**

<http://www.globalgeochemicalbaselines.eu/>

In 2012 the main objectives for this group continue to be 1) to prepare a global geochemical database and its representation in map form and 2) to document the chemical elements and species in the Earth’s near surface environment. Currently there are 126 members from 69 countries. In pursuit of its objectives, TGGGB has aided partners by providing geochemical mapping training, consultation, organizing meetings, establishing criteria for inclusion of data into global database, as well as acting as a data repository. TGGGB members continued to interface with the EuroGeoSurveys Geochemistry Expert Group, the International Atomic Energy Agency, the Global Terrestrial observing Systems, the Geochemical Survey (Australia) and the North American Soil Geochemical landscapes project. In 2012, a geochemical mapping seminar was held in Nanjing for CCOP countries and the group contributed to a special issue of Geoscience Frontiers (2012; papers from 2009 symposium). There was a delay in the start of the International Geochemical Mapping project by member countries of Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCGP) because funds were lacking for training, additional analytical services and quality control of data. In 2012, at review on TGGGB, the group was applauded for its successful training programs for developing countries. TGGGB future plans included the launch of the UNESCO International Center for Global-Scale Geochemistry.

**Heritage Stone Task Group (HSTG)**

This new IUGS Task Group is compliments Commission C-10 Building Stones and Ornamental Rocks of the International Association of Engineering Geology and the Environment. This Group is providing an ongoing working framework that facilitates formal designation of a natural stone product as a “Global Heritage Stone Resource” (GHSR). Provision is also made for associated formal designations of natural stone materials, and for formal recognition of specified features characterising natural stone resources, where deemed appropriate.

Key definitions from 2011 include: 1) *Natural stone* refers to stone (= rock), removed from its original formation, in blocks, slabs or fragments; and subsequently utilised in its natural state; 2) A *Global Heritage Stone Resource* (GHSR) is a designated natural stone that has achieved widespread use over a significant historical period with due recognition in human culture; 3) A *Global Heritage Stone Province* (GHSP) is a designated area, where two or more GHSRs are associated in close geographic proximity and by their common geology. Designations of GHSR and GHSP are the responsibility of this Task Group.

**Task Groups related to Geoscience Professionals (TGGW and TGGP)**

In 2012, IUGS has lent its support to various activities related to the Geoscience as Profession. The Task Group on the Geoscience Workforce TGGW was led by officers of the American Geological Institute (AGI). In 2012

TGGW continued its work to establish definitions for the profession; a global baseline of quantity; diversity and identify capacity-building strategies. Its activities have resulted in the 2012 Directory of Geoscience Departments, which includes as many geoscience departments internationally as possible.

A new Task Group on Global Geoscience Professionalism - TGGGP was developed in order to develop networks for Professional Geosciences Organizations to share experience and define best practice. A broader definition of the term “professional” that included not only applied practitioners, but also educators and researchers. For 2012 there were three primary goals for the TGGGW. First, using the new knowledge of academic geosciences departments to gain an understanding of the degree production in those programs and to better understand the supply-side of the geosciences human capital system. Second, the TGGW will re-engage the active membership to update the state of geosciences in their area of expertise, especially in regards to levels of employment and migration trends. Third, AGI and AIPG hosted a workshop at the IGC in Brisbane to look at issues of licensure and accreditation of geoscientists and geosciences programs around the world. This particular issue is the defining difference between the geosciences in most countries, and it is hoped to engage a broader population to flush out the trends, issues, and potential collaborations which may increase mobility of geoscientists and improve the understanding of how geoscientists are actually defined and classified globally.

#### **Task Group on IUGS-IGC Statutes and Byelaws**

During 2012, the Task Group revisions of the Definitions, Statutes and Byelaws for IGC and IUGS, and produced two documents that were, respectively, approved for approved at the IUGS Council meeting to be held at the 34<sup>th</sup> IGC (Brisbane, August 2012). The Task Group has disbanded.

#### **Forensic Geology Initiative**

<http://www.forensicgeologyinternational.com/>

The IUGS-GEM Working Group on Forensic Geology was formed in 2008 and became an IUGS Initiative in 2011. This group’s members report that there has been greater interest and awareness within the law enforcement for geological knowledge. Much of the core activity of geologists is the transfer of skills that will lead to better understanding of geological evidence collected at the crime scene, and from objects and collected from a suspect or victim. This “trace evidence” can be strictly geological material like soils, sediments, rock fragments and microfossils, or geologically derived materials such as glass, bricks, tiles, plasterboard, concrete and cement. Burial grounds have been investigated by geological methods as pollutants/contaminants. Mining fraud is another example of where forensic geologists have been involved.

By 2012, 40 countries were involved in the initiative and dozens of events were held (see report). Highlights included presentations held at the Geological Association of Canada (GAC), and training courses for officers of the “Servicio de Criminalística de Guardia Civil”, the Australian Federal Police (AFP) in Brisbane and the Colombian Police in Bogota. Principal challenges for the initiative and forensic geology are related to accreditation, funding, confidentiality, press and media, publications, and conferences. Most of the expenditures for the initiative go to outreach, knowledge transfer and training.

## **IUGS Collaborative projects**

#### **The International Geoscience Program (IGCP)**

IGCP is a partnership with UNESCO - funding of research projects is provided in equal measure by the two organisations. The IUGS Secretary General is on the IGCP Bureau. IGCP mobilizes global cooperation in the

Earth sciences through providing a platform for scientists from across the world to push the frontiers of knowledge forward through concrete projects. In the early years, the Programme enhanced scientific exchange through the correlation of geological strata and research data, focusing on basic geoscientific research and on making connections between events throughout the Earth's history.

Since 2011, IGCP has supported work on five themes:

- **Earth Resources: Sustaining our Society**
- **Global Change: Evidence from the geological record**
- **Geohazards: Mitigating the risks**
- **Hydrogeology: Geoscience of the water cycle**
- **Geodynamic: Control our environment**

The Programme has always built bridges between disciplines and between scientists, including young ones, with aims of stimulating cutting-edge research and sharing scientific knowledge for the benefit of all. IGCP Projects funded in 2012 are listed in Appendix 5.

The ARC report on its review of IGCP will be presented at IUGS 66th Executive Committee meeting February 2013. The conclusions and recommendations of the Committee were as follows (v. 28.03.2013)

- 1. The IUGS and UNESCO should create a Strategic Task Group (STG) to focus on the future of IGCP, specifically to streamline the IGCP operations and practices and to redefine its vision, with the intent to have a completed report by the autumn 2013, in time for the General Conference of the UNESCO in the autumn 2015.*
- 2. An operational digital record of a systematically collected, archived, and cross-indexed database on the IGCP projects must be adopted immediately.*
- 3. All correspondences originating from the IGCP Secretariat must formally include the IUGS as well as UNESCO in its signatory.*
- 4. UNESCO and the IUGS EC should work closely to identify external sources of funding for the IGCP projects. UNESCO should try to obtain additional sources of funding (internal and external) to counterbalance its diminishing financial contributions to the IGCP Programme.*
- 5. The annual funding from IUGS to the IGCP should be adjusted and reduced accordingly to be equitable to the funds provided by UNESCO in any one year (as equal partners).*
- 6. The IGCP Secretariat should adopt and immediately start using the annual project reporting forms and templates, revised and streamlined by the Scientific Board in 2011.*
- 7. The IUGS EC and UNESCO should immediately engage in discussions to reduce the length of tenure for IGCP projects from five to three years for the next phase of proposals.*
- 8. IUGS should identify and appoint a member of its EC as an IGCP Liaison, as the 'contact person' for the IGCP Secretariat to copy all IGCP projects-related correspondences.*
- 9. The IGCP Secretariat has been functioning below capacity, adversely impacting its operation and performance. UNESCO should consider reinstating allocated staff time to the IGCP.*
- 10. The visibility of IUGS in IGCP and its projects has been far below satisfactory and should be significantly improved as a matter of priority.*
- 11. The ARC urges the IUGS Executive Committee and the UNESCO to change the current IGCP logo, which is outdated and not representative of the contemporary earth science community and its practices. A modern logo would convey a strong message to all stakeholders, and would be part of the rejuvenated IGCP.*



*12. The IUGS Executive Committee should review if and how the UNESCO's recent change in mandate, regarding sustainability and peace-building in cross-border cooperation, should be reflected in the IGCP Programme.*

## **Geological Applications of Remote Sensing (GARS)**

Geological Applications of Remote Sensing (GARS) is a joint operation of IUGS and UNESCO and now involves 40 institutes and individuals from 28 countries, most from the developing world. The GARS programme contributes to the advancement of geological research throughout the world and the development of the understanding of the Earth system, in order to address problems of particular relevance to the welfare of the Earth's population. Currently, under IGOS, GAR focuses on three of the five strategic issues identified by IUGS: Reducing the vulnerability of communities at risk to natural hazards (IGOS Geohazards Theme); Managing resources in a sustainable and environmentally sound way (Groundwater Initiative) and Contributing to understanding of global environmental changes. The GARS Programme has a strong interface with other international projects and thus continues to enhance the visibility of earth science amongst the space agencies, inter-governmental UN organizations and world research programmes sponsored by the Group on Earth Observation's (GEO).

An Adhoc Review Committee for GARS was constituted in 2012. They held their first meeting in Unesco January 2013 at UNESCO. ARC members recognized the potential importance of the societal relevance of the GARS activities and the symbiotic working relationships between GARS and GEO to serve the needs of the international science community, policy-makers and societies. IUGS has played an integral part of this equation by providing financial support to GARS for several years. The position of IUGS as a new GEO PO has not been capitalized on to the extent that it could and should be over the years. Based on their review, the ARC recommended the following:

- 1. The Executive Committee of IUGS must deliberate whether IUGS should continue its involvement in the GARS Program, particularly as its sole financial contributor. The need for the GARS Program and its added value to IUGS must be discussed thoroughly by the EC before further decisions about this program are made. This ARC recommends terminating the IUGS financial sponsorship for the GARS Program.*
- 2. A new Secretary for the GARS Program should be appointed immediately. This position has been vacant for several years, adversely affecting the operation of the program. IUGS may consider hosting the new GARS Secretariat.*
- 3. An international search must be conducted to identify a qualified scientist to replace the current GARS Chair within two years. Together with a new Secretary, this new leadership is expected to design a future vision for the GARS program.*
- 4. Past GARS annual reports should be available to the entire EC, and should be posted on the IUGS website.*
- 5. IUGS should appoint a qualified scientist to represent it in the GEO platform and in GEOSS.*

## **Group on Earth Observations (GEO-GEOSS)**

The GEO is a voluntary partnership of governments and international organizations. Membership in GEO is open to all member States of the United Nations and to the European Commission. GEO Members currently include 80 Governments, the European Commission, and an additional 58 intergovernmental, international, and regional organizations, with a mandate in Earth observation or related issues. Participating Organizations include, among others, ICSU and UNESCO (including the UNESCO-IUGS joint program GARS), as well as some ICSU GeoUnions. The GEO is coordinating international efforts to build a Global Observation System of Systems (GEOSS), with the aim of constructing a global public infrastructure for Earth observations

that, like the Internet, will consist of a flexible and distributed network that connects users to existing data bases and portals and provides reliable, up- to-date and user friendly information. GEOSS is simultaneously addressing nine areas of critical importance to people and society: Disasters, Health, Energy, Climate and Biodiversity.

GEO attended the UN Conference on Sustainable Development (Rio+20) in Rio de Janeiro in June 2012, and the 34<sup>th</sup> IGC in Brisbane to help their international profile and its ability to contribute to the Conference themes and outputs, and would help to position GEOSS as a leading provider of Earth observation data and information. 88 countries are members and there are 67 participating organisations (e.g. IUGS and EuroGeoSurveys). By end of 2015, GEOSS will go open source. Two new components were added in 2012: EN-01 Energy and Georesource Management” and SB-05 Impact Assessment of Human Activities, a task group coordinated by Thierry Ranchin.

### **Task Group on Isotopes and Geochronology (TGIG)**

The goal of this Task Group is to formulate new, specific recommendations for isotopic decay constants, isotopic abundances, and uncertainties. The group is financially and morally supported by both IUGS and IUPAC. The decay constants that have been in use in the geological community for the last 22 years were endorsed and recommended by IUGS. However, recent analytical improvements have exposed potential problems with the 1977 recommendations. Critical to the success of the work of the Task Group is that its members were viewed by the entire scientific community as accomplished, recognized practitioners, rather than consumers, of radioisotope geochemistry and geochronology. Currently, activity of the Group includes re-evaluation the major papers on half-lives that are used for the radiometric dating in order to assess the uncertainties caused by the usage of the “year” as a time unit. In February 2012, there was a meeting with IUPAC members at the National Physics Laboratory, Teddington, UK to coordinate the definition and use of time units between IUPAC and the accepted IUPAC-IUGS recommendation. The IUPAC side has expressed a great interest in a joint effort. In September 2012, there was a plenary meeting of the TGIG in Antwerpen, Belgium. In addition to the coordination of the time unit recommendations, the half-life of <sup>87</sup>Rb was evaluated and a recommendation is being drafted for publication in a leading commercial peer-reviewed journal. Periodic updates in the IUGS and IUPAC official journals are also being considered.

### **GeoHeritage and Geoparks**

IUGS strongly supports the concept of GeoHeritage. Until August 2012, the former Secretary General, Peter Bobrowsky, was primarily responsible for all GeoHeritage issues for the Union, while representation in the Bureau of UNESCO’s Global GeoParks Network (GGN) was by Councillor Colin Simpson, and the European GeoParks Network (EGN) was by Vice President Jacques Charvet.

Geoparks have a role to play in counteracting the decline in interest in geosciences for students. Geopark management must acknowledge and cater to the different users of the parks, to ensure that there is appropriate access to geological sites for professional and practicing geologists as well as for visitors. Their needs are significantly different. Geopark interpretive materials (maps, signs, trails, brochures, etc) need to include geological information in an engaging manner as well as good photos and diagrams to facilitate the learning process for non-geoscientists. The development, sustainable and appropriate management of Geoparks should form part of a larger global move towards environmental and cultural awareness and sensitivity to the whole of society’s role in the planet earth. There is a real sense that the time is right for Geoparks, and individuals are encouraged to use the Geopark Network guidelines for the development of existing and proposed Geoparks.

### **Geological World Heritage**

IUGS has an MoU with the International Union for Conservation of Nature (IUCN) to evaluate new

GeoHeritage proposals that relate to UNESCO World Heritage site status. IUCN provides a list of sites that have geological components and IUGS has to provide a desktop technical report, through expert volunteers. This collaboration between IUGS and IUCN on World Heritage Site Evaluation entered its sixth year in 2012. The IUGS reviews are one of 10 important sets of reviews drawn on in the evaluation of candidates for World Heritage status. Four sites were nominated for consideration in 2012: 1) Lacs d'Ounianga, Chad; 2) Chengjiang Fossil Site, China; 3) Lena Pillars, Russian Federation; and 4) Nahal Ma'arot/Wadi el Mughara Caves/Mount Carmel, Israel.

## **International Lithosphere Programme (ILP)**

<http://www.sclilp.org>

This program formerly the Scientific Committee on the Lithosphere (SCL), is a joint venture of IUGS and IUGG. It seeks to elucidate the nature, dynamics, origin and evolution of the lithosphere, through international, interdisciplinary collaboration. The Programme involves several hundred scientists from over 60 countries. A number of challenges face ILP, including the need to strengthen the connection between solid-earth and non-solid-earth aspects relevant to the lithosphere and vice-versa; bolster the profile and impact of lithosphere research and topics of societal relevance (i.e., energy and environment); attract young researchers by choosing topics and adopting integrated approaches; promote training of young researchers on lithosphere studies; and to initiate dedicated programmes that address world-class problems.

ILP is financed by contributions from IUGS, IUGG, 12 national committees, with the substantial support from Deutsches GeoForschungsZentrum, GFZ Potsdam, who has run the ILP Office. In 2012, ILP Task forces and regional committees held successful meetings and workshops and enlarged their networks. The Joint Programme gave significant input and gained visibility at several large meetings (EGU, AGU, GSA, IGC), and its member produced large number of ILP publications and several special volumes.

## **OneGeology**

The IUGS has been formally involved with OneGeology since October 2009. Since then IUGS main goal in relation to OneGeology has been to support not only its interaction with the IUGS Commission on the Management and Application of Geoscience Information (CGI), but also with other IUGS bodies and with the 34<sup>th</sup> International Geological Congress (Brisbane 2012). In December, IUGS entered a Agreement with OneGeology, thereby becoming Consortium member upon payment of dues.

The current Internet portal and catalogue is fully accessible (view, zoom, pan, search, download etc.) and linked and viewable using Google maps. OneGeology has provided many data services and has continued to offer a help desk. Site users, who have included researchers, educators and entrepreneurs, totaled 25 million visitors from all over the globe when the website was launched. Organizations from 117 nations have participated, including 250 data services from 54 surveys. Despite OneGeology success, financial limitations and differences in national priorities have meant that the best data available nationally has not always been delivered. At the time of the report, 63 surveys had not yet made their data available.

During 2012, OneGeology strengthened linkages with UNESCO Geoparks network to create a map of GeoParks and World Heritage sites that are geologically related. The information included in the OneGeology webpages links geological landscapes and sites with the geological maps data provided in the OneGeology portal. During the 34<sup>th</sup> IGC One Geology will hold its main meetings for 2012 and plans Operational Management and Steering Group meetings, along with Directors open meeting. Other events include the symposium sessions, an exhibition booth, a social evening and a competition.

## Appendices

### Appendix 1: IUGS – Executive Members and Meetings

#### *Outgoing Officers*

President	Prof. A. Riccardi	Aug. 2008 – Aug. 2012
Past President	Prof. Z. Hongren	Aug. 2008 – Aug. 2012
Secretary General	Dr. P.T. Bobrowsky	Aug. 2008 – Aug. 2012
Treasurer	Prof. W. Cavazza	Aug. 2008 – Aug. 2012
Vice President	Prof. O. Gerel	Aug. 2008 – Aug. 2012
Vice President	Prof. J. Charvet	Aug. 2008 – Aug. 2012
Councillor	Prof. E. Errami	Aug. 2008 – Aug. 2012
Councillor	Mr. C. Simpson	Aug. 2008 – Aug. 2012
Councillor	Ms. W. Hill	Aug. 2010 – Aug. 2014
Councillor	Prof. S.K. Tandon	Aug. 2010 – Aug. 2014

#### *Incoming Officers – Elected August 2012*

President	Prof. R. Oberhänsli	Aug. 2012 – Aug. 2016
Secretary General	Dr. I. Lambert	Aug. 2008 – Aug. 2016
Treasurer	Prof. Dong S.	Aug. 2008 – Aug. 2012
Vice President	Prof. Y. Dilek	Aug. 2008 – Aug. 2012
Vice President	Prof. M. Komac	Aug. 2008 – Aug. 2012
Councillor	Ms. W. Hill	Aug. 2010 – Aug. 2014
Councillor	Prof. S.K. Tandon	Aug. 2010 – Aug. 2014
Councillor	Dr. H. Mouri	Aug. 2008 – Aug. 2012
Councillor	Prof. O. Yujiro	Aug. 2008 – Aug. 2012
Past Secretary General	Dr. P. Bobrowsky	Aug. 2012 – Aug. 2013
Councillor	Amel Barich	Aug. 2014 – Aug. 2018
Councillor	Stephen Johnston	Aug. 2010 – Aug. 2018

#### *IUGS Secretariat: U.S. Geological Survey, VA until Dec 1, 2012*

Mr. R. Calnan, Head of Secretariat  
 Ms. N. Zeigler, Assistant

#### *IUGS Secretariat: Chinese Academy of Geological Sciences, Beijing. Dec 1, 2012*

Mr. Li Zhijian (Director), Mr. Wang Wei (Deputy Director), Ms. Anne Liinamaa-Dehls (Executive Secretary),  
 Mr. Zhu Chen (Information Systems), Ms. Song Youquan (Assistant to Treasurer)

#### **Executive Committee Meetings**

63rd IUGS Executive Committee Meeting, San Sebastian (Spain) 14-17 February 2012  
 64th IUGS Executive Committee. 34th IGC (Australia) 4 August 2012  
 65th IUGS Executive Meeting, 34th IGC (Australia). 11 August 2012. Informal meeting.

#### **Council Meeting**

3<sup>rd</sup> Joint Session IUGS-IGC Council, Brisbane, Australia, August 5 and 9, 2012 – see Appendix 8



## Appendix 2: IUGS Adhering Organizations – Membership Category and Status

	Country Name	Adhering Organization	Cat	Status
1	Albania	Albanian Geological Survey	1	A
2	Algeria	In process of reactivating	1	I
3	Angola	Ministry of Geology and Mines	1	I
4	Argentina	Asociación Geológica Argentina	3	A
5	Australia	Australian Academy of Science	6	A
6	Austria	Geological Survey of Austria	3	A
7	Azerbaijan	Azərbaycan Milli Elmlər Akademiyasının	1	A
8	Bangladesh	Geological Survey of Bangladesh	1	A
9	Belarus	Belarussian Geological Society	1	I
10	Belgium	Royal Academies for Science and the Arts of Belgium	3	A
11	Belize	Geology & Petroleum Department	1	I
12	Bolivia	Servicio Nacional de Geología y Minería	1	I
13	Bosnia & Herz.	Geological Society of Bosnia and Herzegovina	1	A
14	Botswana	Geological Survey of the Republic of Botswana	2	A
15	Brazil	Mineral Resources Research Company - CPRM	4	A
16	Bulgaria	Bulgarian Academy of Sciences	2	AP
17	Burkina Faso	Bureau of Mines and Geology of Burkina Faso	1	I
18	Burundi	Département de Géologie et Minéralogie	1	I
19	Cameroon	Centre for Geological and Mining Research	1	A
20	Canada	National Research Council of Canada	6	A
21	Chile	Sociedad Geologica de Chile	1	A
22	China	Geological Society of China	8	A
23	Colombia	Colombian Geological Society	1	A
24	Congo, Dem. Rep.	GECAMINES General Direction	1	I
25	Costa Rica	Colegio de Geólogos de Costa Rica	1	A
26	Cote d'Ivoire	CURAT – Science de la Terre e des Ressources minières	1	A
27	Croatia	Croatian Geological Society	2	A
28	Cuba	Instituto de Geología y Paleontología	1	I
29	Cyprus	Geological Survey Department, Cyprus	2	A
30	Czech Republic	Czech National Geological Committee	2	A
31	Denmark	Royal Danish Academy of Sciences and Letters	4	A
32	Ecuador	INIGEMM	1	A
33	Egypt, Arab Rep.	Egyptian Acad. of Sc. Research & Technology (ASRT)	2	A
34	Estonia	Estonian Academy of Sciences	2	A
35	Finland	Finnish National Committee for Geology	3	A
36	France	Geological Society of France	7	A
37	Gambia, The	Geological Unit	1	A
38	Georgia	Georgian National Committee of Geologists	1	I
39	Germany	Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)	7	A

40	Ghana	Ghana Geological Survey Dept.	1	A
41	Greece	Institute of Geology and Mineral Exploration	2	A
42	Guatemala	Instituto Geografico Nacional	1	I
43	Guyana	Guyana Geology and Mines Commission	1	A
44	Hungary	Hungarian Academy of Sciences	3	A
45	Iceland	Icelandic Institute of Natural History	1	A
46	India	Indian National Science Academy	8	A
47	Indonesia	The Indonesian Association of Geologists	1	A
48	Iran, Islamic Rep.	Geological Survey of Iran	3	I
49	Iraq	State Company of Geological Survey and Mining	2	A
50	Ireland	Geological Survey of Ireland	4	A
51	Israel	Israel Acad. of Sciences & Humanities	2	A
52	Italy	CNR	7	A
53	Jamaica	Mines & Geology Division	1	I
54	Japan	Science Council of Japan	8	A
55	Jordan	Jordanian Geologists Association	1	A
56	Kazakhstan	Kazakhstan Geological Society (KazGeo)	3	A
57	Kenya	Mines and Geology Department	1	A
58	Korea, Dem. Rep.	The Korean Geological Association	1	A
59	Korea, Rep.	The Geological Society for Korea	3	A
60	Kosovo	Independent Commission for Mines and Minerals	2	A
61	Latvia	Department of Geology, University of Latvia	1	I
62	Lebanon	Lebanese National Council for Scientific Research	1	A
63	Lesotho	Department of Mines and Geology, Lesotho	1	I
64	Libya	Geological Research & Mining Dept.	1	I
65	Lithuania	Geological Survey of Lithuania	1	A
66	Luxembourg	Service Geologique du Luxembourg	1	A
67	Madagascar	Ministere des Mines et de l'Énergie	1	I
68	Malawi	Geological Survey of Malawi	1	A
69	Malaysia	Jabatan Mineral dan Geosains Malaysia	1	A
70	Mexico	Instituto de Geologia	2	AP
71	Mongolia	Geological Society of Mongolia	1	A
72	Morocco	Direction de Développement Minier	2	A
73	Mozambique	National Directorate of Geology	1	AP
74	Namibia	Geological Survey of Namibia	1	A
75	New Zealand	The Royal Society of New Zealand	3	A
76	Nicaragua	Asociación de Geólogos y Profesiones Afinas	1	I
77	Niger	Université de Niamey	1	I
78	Nigeria	Geological Survey of Nigeria Agency	1	AP
79	Norway	Det Norske Videnskaps-Akademi	3	A
80	Pakistan	Pakistan Academy of Geological Sciences	1	I
81	Panama	Ministerio de Comercio e Industrias	1	I
82	Papua New Guinea	Geological Survey of Papua New Guinea	1	I

83	Paraguay	Viceministerio de Minas Y Energia	1	I
84	Peru	Instituto Geologico Minero y Metalurgico	1	A
85	Philippines	Mines and Geosciences Bureau	1	I
86	Poland	Polska Akademia Nauk (Polish Academy of Sciences)	2	A
87	Portugal	Process of Reactivating	2	A
88	Romania	Romanian Academy	3	A
89	Russian Federation	Russian Academy of Sciences	8	A
90	Saudi Arabia	Saudi Geological Survey	1	A
91	Senegal	Direccion des Mines et de la Geologie	1	I
92	Serbia	Serbian Geological Society	1	A
93	Slovak Republic	Slovak Academy of Sciences	2	A
94	Slovenia	Geological Survey of Slovenia	1	A
95	Somalia	Process of reactivating Somalian contact	1	I
96	South Africa	National Research Foundation	4	A
97	Spain	Instituto Geológico y Minero de España IGME	4	A
98	Sri Lanka	Geological Survey and Mines Bureau	1	AP
99	Sudan	Geological Research Authority of Sudan	1	AP
100	Suriname	Geologisch Mijnbouwkundige Dienst	1	I
101	Swaziland	Geological Survey and Mines Department	1	I
102	Sweden	The Royal Swedish Academy of Sciences	3	A
103	Switzerland	Swiss Academy of Sciences	4	A
104	Syrian Arab Republic	Ministry of Petroleum and Mineral Resources	1	A
105	Taipei, China	Geological Society	3	A
106	Tajikistan	Main Department of Geology	2	A
107	Tanzania	Geological Survey of Tanzania	1	A
108	Thailand	Department of Mineral Resources	1	A
109	Tunisia	Office National des Mines	1	I
110	Turkey	Maden Tetkik ve Arama Genel Müdürlüğü	3	A
111	Uganda	Department of Geological Survey and Mines	1	A
112	Ukraine	National Committee of Geologists of Ukraine	3	I
113	United Kingdom	The Geological Society	8	A
114	United States	National Academy of Sciences	8	A
115	Uruguay	Direccion Nacional de Minería y Geología	1	I
116	Uzbekistan	State Committee on Geology and Mineral Resources	2	A
117	Venezuela, RB	Ministerio de Energia y Minas	1	I
118	Vietnam	Vietnam Union of Geological Sciences	1	A
119	Yemen, Rep.	Geological Survey and Mineral Resources Board	1	A
120	Zambia	Geological Survey Department, Zambia	1	I

Notes: situation as of Dec. 31st, 2011.

A=Active; I=Inactive; AP=Active status pending

Netherlands withdrawn for 2011, but began reactivated through TNO late 2012

**Appendix 3: IUGS Income and Expenses for 2012. (Note: Dong Shuwen took over as Treasurer, from William Cavazza in August 2012)**

	Note	Amount(USD)		
		By Dong	By Cavazza	Total
<b>Income</b>	<b>1</b>	<b>147,592.55</b>	<b>367,012.29</b>	<b>514,604.84</b>
<b>Expense</b>	<b>2</b>	<b>66,862.54</b>	<b>486,148.82</b>	<b>553,011.36</b>
<b>Balance</b>		<b>80,730.01</b>	<b>(119,136.53)</b>	<b>(38,406.52)</b>
<b>Note 1 Income</b>				
		Amount(USD)		
		By Dong	By Cavazza	Total
<b>Membership Fees</b>				
Previous years		-	42,685.88	42,685.88
Current year		-	258,483.50	258,483.50
		-	301,169.38	301,169.38
<b>Other incomes</b>				
Previous year		-	21,455.00	21,455.00
Current year		147,592.55	44,387.91	191,980.46
		147,592.55	65,842.91	213,435.46
<b>Total</b>		<b>147,592.55</b>	<b>367,012.29</b>	<b>514,604.84</b>
<b>Note 2 Expense</b>				
		Amount(USD)		
		By Dong	By Cavazza	Total
IGCP		17,500.00	86,000.00	103,500.00
Joint Programmes		3,500.00	11,000.00	14,500.00
IUGS Commissions		5,300.00	93,500.00	98,800.00
IUGS Task Groups		5,000.00	13,000.00	18,000.00
Initiatives		-	15,000.00	15,000.00
Committees		-	-	-
Affiliated Organizations		-	30,000.00	30,000.00
Contributions		-	12,570.00	12,570.00
Episodes		-	28,000.00	28,000.00
Other expenses		35,562.54	197,078.82	232,641.36
<b>Total</b>		<b>66,862.54</b>	<b>486,148.82</b>	<b>553,011.36</b>



## Appendix 4: IUGS Affiliated Organizations

1	Acronym	Full Name	Web
2	AAG	Association of Applied Geochemists	<a href="http://www.appliedgeochemists.org">www.appliedgeochemists.org</a>
3	AAPG	American Association of Petroleum Geologists	<a href="http://www.aapg.org">http://www.aapg.org</a>
4	AAWG	African Association of Women in Geosciences	<a href="http://www.aawg.org/">http://www.aawg.org/</a>
5	AEGS	Association of European Geological Societies	<a href="http://www.aegs.it/">http://www.aegs.it/</a>
6	AGA	Arab Geologist Association	No website
7	AGI	American Geosciences Institute	<a href="http://www.agiweb.org">http://www.agiweb.org</a>
8	AGID	Association of Geoscientists For International Development	<a href="http://www.bgs.ac.uk/agid/">http://www.bgs.ac.uk/agid/</a>
9	AGU	American Geophysical Union	<a href="http://www.agu.org">http://www.agu.org</a>
10	AIPEA	Association Internationale Pour L'Etude Des Argiles	<a href="http://aipea.org/">http://aipea.org/</a>
11	BGS	Balkan Geophysical Society	<a href="http://www.balkangeophysoc.gr/">http://www.balkangeophysoc.gr/</a>
12	CFG	Canadian Federation of Earth Scientists	<a href="http://earthsciencescanada.com/cfes/#">http://earthsciencescanada.com/cfes/#</a>
13	CBGA	Carpathian Balkan Geological Association	<a href="http://www.cbga2014.org">http://www.cbga2014.org</a>
14	CCOP	Coordinating Committee For Geoscience Programmes In East and Southeast Asia	<a href="http://www.ccop.or.th/">http://www.ccop.or.th/</a>
15	CGMW	Commission For the Geological Map of the World	<a href="http://ccgm.free.fr/index_gb.html">http://ccgm.free.fr/index_gb.html</a>
16	CIFEG	International Center For Training and Exchanges In the Geosciences	<a href="http://www.cifeg.org">http://www.cifeg.org</a>
17	CPC	Circum-Pacific Council	<a href="http://www.circum-pacificcouncil.org/">http://www.circum-pacificcouncil.org/</a>
18	DOSECC	Drilling, Observation and Sampling of the Earth'S Continental Crust	<a href="http://www.dosecc.org">http://www.dosecc.org</a>
19	EASE	European Association of Science Editors	<a href="http://www.ease.org.uk">http://www.ease.org.uk</a>
20	EFG	European Federation of Geologists	<a href="http://www.eurogeologists.eu">http://www.eurogeologists.eu</a>
21	EGN	European Geoparks Network	<a href="http://www.europeangeoparks.org">http://www.europeangeoparks.org</a>
22	EGS	European Geological Surveys	<a href="http://www.eurogeosurveys.org">http://www.eurogeosurveys.org</a>
23	EMU	European Mineralogical Union	<a href="http://eurominunion.org/">http://eurominunion.org/</a>
24	FIST	Italian Federation of Earth Sciences	<a href="http://www.geoitalia.org">http://www.geoitalia.org</a>
25	GS	Geochemical Society	<a href="http://www.geochemsoc.org/">http://www.geochemsoc.org/</a>
26	GSA	Geological Society of Africa	<a href="http://www.geologicalsocietyofafrica.org">http://www.geologicalsocietyofafrica.org</a>
27	GSA	Geological Society of America	<a href="http://www.geosociety.org">http://www.geosociety.org</a>
28	GSI	Geological Society of India	<a href="http://www.geosocindia.org">http://www.geosocindia.org</a>

29	GV	Geologische Vereinigung	<a href="http://www.g-v.de">http://www.g-v.de</a>
30	IAEG	International Association of Engineering Geology and the Environment	<a href="http://www.iaeg.info/">http://www.iaeg.info/</a>
31	IAG	International Association of Geomorphologists	<a href="http://www.geomorph.org">http://www.geomorph.org</a>
32	IAGC	International Association of Geochemistry	<a href="http://www.iagc-society.org">www.iagc-society.org</a>
33	IAGOD	International Association on the Genesis of Ore Deposits	<a href="http://www.iagod.org">http://www.iagod.org</a>
34	IAH	International Association of Hydrogeologists	<a href="http://www.iah.org">http://www.iah.org</a>
35	IAMG	International Association For Mathematical Geosciences	<a href="http://www.iamg.org">http://www.iamg.org</a>
36	IAS	International Association of Sedimentologists	<a href="http://www.sedimentologists.org/">http://www.sedimentologists.org/</a>
37	ICL	International Consortium on Landslides	<a href="http://www.iclhq.org">http://www.iclhq.org</a>
38	IFPS	International Federation of Palynological Societies	<a href="http://geo.arizona.edu/palynology/ifps.html">http://geo.arizona.edu/palynology/ifps.html</a>
39	IGEO	International Geoscience Education Organisation	<a href="http://www.geosced.org/">http://www.geosced.org/</a>
40	IMA	International Mineralogical Association	<a href="http://www.ima-mineralogy.org">http://www.ima-mineralogy.org</a>
41	IMGA	International Medical Geology Association	<a href="http://www.medicalgeology.org/">http://www.medicalgeology.org/</a>
42	IPA	International Palaeontological Association	<a href="http://ipa.geo.ku.edu">http://ipa.geo.ku.edu</a>
43	IPA	International Permafrost Association	<a href="http://www.ipa-permafrost.org/">http://www.ipa-permafrost.org/</a>
44	ISRM	International Society for Rock Mechanics	<a href="http://www.isrm.net/">http://www.isrm.net/</a>
45	ISSMGE	International Society of Soil Mechanics & Geotechnical Engineering	<a href="http://www.issmge.org/">http://www.issmge.org/</a>
46	MetSoc	Meteoritical Society	<a href="http://www.meteoriticalsociety.org/">http://www.meteoriticalsociety.org/</a>
47	NGWA	National Ground Water Association	<a href="http://www.ngwa.org">http://www.ngwa.org</a>
48	PROGEO	European Association For the Conservation of the Geological Heritage	<a href="http://www.sgu.se/hotell/progeo/">http://www.sgu.se/hotell/progeo/</a>
49	SEG	Society of Economic Geologists, Inc.	<a href="http://www.segweb.org">http://www.segweb.org</a>
50	SGF	Geological Society of France	<a href="http://www.geosoc.fr">http://www.geosoc.fr</a>
51	SEPM	Society For Sedimentary Geology	<a href="http://www.sepm.org/">http://www.sepm.org/</a>
52	SGA	Society For Geology Applied To Mineral Deposits	<a href="http://www.e-sga.org/">http://www.e-sga.org/</a>
53	YES	Young Earth Scientists Network	<a href="http://www.networkyes.org/">http://www.networkyes.org/</a>

**Note: As of Dec 31, 2012**



## Annual Report 2012

1. International Association For Geoethics (IAGETH) <http://tierra.rediris.es/IAGETH> and International Association For Promoting Geoethics (IAPG) <http://www.iapg.geoethics.org> applied for status of Affiliated Organization.
2. Both the Geological Society of France (SGF) and the Canadian Federation of Earth Scientists were granted the status of Affiliated Organizations in IUGS in 2009 and 2011 respectively. In 2012, the IUGS Adhering Organizations of France (Académie des Science) and Canada (National Research Council of Canada) informed us that these FGS and CFES would now represent the geologists of their country on IUGS matters and function as national committee

## Appendix 5: IGCP Projects – 2012

### IGCP 540: GOLD-BEARING HYDROTHERMAL FLUIDS OF OREGENIC DEPOSITS

[http://www.geomin.unibo.it/igcp\\_540/](http://www.geomin.unibo.it/igcp_540/)

Countries involved Australia, Brazil, Canada, Chile, Colombia, Czech Republic, Germany, Hungary, India, Italy, Morocco, Norway, People's Republic of China, Russian Federation, Switzerland, USA

Duration 2007-2011 OET in 2012

Project Leader Paolo Garofalo (paolo.garofalo@unibo.it)

### IGCP 559: CRUSTAL ARCHITECTURE AND LANDSCAPE EVOLUTION

<http://www.earthscrust.org>

Countries involved Australia, Canada, Finland, Japan, The Netherlands, New Zealand, People's Republic of China, Russian Federation, South Africa, Spain, USA

Duration 2008-2012

Project Leader Bruce R. Goleby (bruce.goleby@ga.gov.au)

### IGCP 565: GEODETIC MONITORING OF THE GLOBAL WATER CYCLE

<http://www.igcp565.org/>

Countries involved Australia, Canada, Germany, Republic of Korea, South Africa, USA

Duration 2008-2012

Project Leader Hans-Peter Plag (hpplag@unr.edu)

### 567: EARTHQUAKE ARCHAEOLOGY - ARCHAEOSEISMOLOGY ALONG THE ALPINE-HIMALAYAN SEISMIC ZONE

<http://ees.kuleuven.be/igcp567/>

Countries involved Armenia, Austria, Belgium, Canada, France, Germany, Greece, India, Israel, Italy, Japan, Jordan, Kyrgyzstan, Spain, Turkey, United Kingdom, USA, Venezuela

Duration 2008-2012

Project Leader Manuel Sintubin (manuel.sintubin@ees.kuleuven.be)

### IGCP 571: RADON, HEALTH AND NATURAL HAZARDS

Countries involved Czech Republic, Finland, France, Germany, Greece, Holland, India, Indonesia/Sarawak, Iran, Israel, Nepal, Norway, Poland, Portugal, Spain, Sweden, Taiwan (of China), Turkey,



United Kingdom

Duration 2009-2013

Project Leader Gavin K. Gillmore (g.gillmore@kingston.ac.uk)

## **IGCP 572: PERMIAN-TRIASSIC ECOSYSTEMS**

<http://www.igcp572.org/>

Countries involved Argentina, Australia, Austria, Canada, Croatia, Czech Republic, France, Hungary, Germany, India, Iran, Israel, Italy, Japan, New Zealand, Norway, People's Republic of China, Poland, Romania, Russian Federation, Slovenia, Spain, Switzerland, Thailand, Turkey, United Kingdom, USA

Duration 2008-2012

Project Leader Zhong Qiang Chen (zqchen@cyllene.uwa.edu.au)

## **IGCP 574: BENDING AND BENT OROGENS, AND CONTINENTAL RIBBONS**

<http://www.brynmawr.edu/geology/faculty/aweil/IGCP-574/>

Countries involved Argentina, Australia, Canada, Germany, Italy, Mexico, New Zealand, Portugal, Romania, Russian Federation, South Africa, Spain, Switzerland, Turkey, United Kingdom, USA

Duration 2009-2013

Project Leader Stephen T. Johnston (stj@uvic.ca)

## **IGCP 575: PENNSYLVANIAN TERRESTRIAL HABITATS AND BIOTAS OF SOUTHEASTERN EURAMERICA**

<http://www.igcp575.org>

Countries involved Austria, Bulgaria, Canada, Croatia, Czech Republic, Germany, Italy, Japan, The Netherlands, People's Republic of China, Poland, Romania, Serbia, Slovenia, Ukraine, Turkey, Kingdom, USA

Duration 2010-2014

Project Leader Christopher J. Cleal (chris.cleal@nmgw.ac.uk)

## **IGCP 580 APPLICATION OF MAGNETIC SUSCEPTIBILITY ON PALEOZOIC SEDIMENTARY ROCKS**

<http://www.ulg.ac.be/geolsed/MS>

Countries involved Algeria, Australia, Belgium, Brazil, Bulgaria, Canada, Czech Republic, Estonia, Iraq, Kenya, Namibia, Poland, Tunisia, USA, Vietnam

Duration 2009-2013

Project Leader Anne-Christine da Silva (ac.dasilva@ulg.ac.be)

## **IGCP 581: EVOLUTION OF ASIAN RIVER SYSTEMS**

<http://geos.ees.hokudai.ac.jp/581/>

Countries involved Australia, India, Japan, People's Republic of China, Republic of Korea, Russian Federation, United Kingdom, USA, Viet Nam

Duration 2009-2013

Project Leader Hongbo Zheng (zhenghb@nju.edu.cn)

## **IGCP 582: TROPICAL RIVERS: HYDRO-PHYSICAL PROCESSES, IMPACTS, HAZARDS AND MANAGEMENT**

<http://www.igcp582.uem.br/>

Countries involved Argentina, Australia, Bolivia, Brazil, France, Germany, Hungary, India, Japan, Mexico, People's Republic of China, Republic of Korea, Spain, United Kingdom, USA, Venezuela

Duration 2009-2013

Project Leader Edgardo M. Latrubesse (latrubesse@austin.utexas.edu)

## **IGCP 585: E-MARSHAL: EARTH'S CONTINENTAL MARGINS: ASSESSING THE GEOHAZARD FROM SUBMARINE LANDSLIDES**

<http://www.igcp585.org>

Countries involved Brazil, Canada, Germany, Greece, India, Ireland, Israel, Italy, Japan, Norway, People's Republic of China, Poland, Spain, Switzerland, United Kingdom, USA

Duration 2010-2014

Project Leader Robert Urgeles (urgeles@icm.csic.es)

## **IGCP 586-Y GEODYNAMIC PROCESSES IN THE ANDES 32°-34°S**

[http://igcp586y.syr.edu/igcp\\_586Y](http://igcp586y.syr.edu/igcp_586Y)

Countries involved Argentina, Chile, France, USA

Duration 2010-2012 (Young Scientist Project)

Project Leader Laura Giambiagi (lgiambia@lab.cricyt.edu.ar)

## **IGCP 587: ENTITY, FACIES AND TIME - THE EDIACARAN (VENDIAN) PUZZLE**

<http://www.geosci.monash.edu.au/precite>

Countries involved Arabia, Argentina, Australia, Brazil, Canada, Germany, India, Iran, Iraq, Ireland, Italy, Japan, Namibia, Netherlands, People's Republic of China, Poland, Russian Federation, Spain, Sweden, South Africa, Taiwan (Republic of China), United Kingdom, Uruguay, USA

Duration 2010-2014

Project Leader Patricia Vickers-Rich (pat.rich@monash.edu)

## **IGCP 588: PREPARING FOR COSTAL CHANGE**

<http://www.coastal-change.org>

Countries involved Argentina, Australia, Belgium, Germany, Hong Kong, India, Italy, Japan, New Zealand, People's Republic of China, Philippines, Singapore, Spain, Thailand, United Kingdom, Uruguay, USA, Viet Nam

Duration 2010-2014

Project Leader Adam D. Switer ([aswitzer@ntu.edu.sg](mailto:aswitzer@ntu.edu.sg))

## **IGCP 589: DEVELOPMENT OF THE ASIAN TETHYAN REALM**

Web site in process

Countries involved Australia, France, India, Indonesia, Iran, Italy, Japan, Malaysia, Mongolia, Myanmar, People's Republic of China, Philippines, Poland, Republic of Korea, Russia, Taiwan of China, Thailand, UK

Duration 2012-2016

Project Leader Xiaochi Jin ([jinxchi@cags.ac.cn](mailto:jinxchi@cags.ac.cn); [jinxchi@sina.com](mailto:jinxchi@sina.com))

## **IGCP 591: THE EARLY TO MIDDLE PALAEOZOIC REVOLUTION**

<http://igcp591.org>

Countries involved Argentina, Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, France, Germany, Iran, Italy, Lithuania, New Zealand, Norway, People's Republic of China, Poland, Portugal, Russia, Saudi Arabia, Spain, Sweden, Turkey, United Kingdom, USA

Duration 2011-2015

Project Leader Bradley D. Cramer ([cramerbd@gmail.com](mailto:cramerbd@gmail.com))

## **IGCP 592: CONTINENTAL CONSTRUCTION IN CENTRAL ASIA**

<http://www.iagod.org/igcp/>

Countries involved Australia, Belgium, France, Germany, Japan, Kazakhstan, Mongolia, People's Republic of China, Russia, South Korea, Taiwan of China, Turkey, United Kingdom, USA

Duration 2012-2015

Project Leader Inna Safonova ([inna03-64@mail.ru](mailto:inna03-64@mail.ru); [inna@igm.nsc.ru](mailto:inna@igm.nsc.ru))

## **IGCP 594: IMPACT OF MINING ON THE ENVIRONMENT IN AFRICA**

<http://www.geology.cz/igcp594>

Countries involved Argentina, Australia, Belgium, Germany, Hong Kong, India, Italy, Japan, New Zealand,

People's Republic of China, Philippines, Singapore, Spain, Thailand, United Kingdom, Uruguay, USA, Viet Nam

Duration 2011-2014

Project Leader Bohdan Kříbek (bohdan.kribek@geology.cz)

## **IGCP 596: CLIMATE CHANGE AND BIODIVERSITY PATTERNS IN THE MID-PALEOZOIC**

<http://www.senckenberg.de/IGCP-596>

Countries involved Australia, Austria, Belgium, Bulgaria, Canada, Czech Republic, Germany, Fiji Islands, France, Italy, Iran, Japan, Mongolia, People's Republic of China, Poland, Portugal, Russia, Spain, Tajikistan, Thailand, Turkey, Ukraine, Union of Myanmar, United Kingdom, USA, Viet Nam

Duration 2011-2015

Project Leader Peter Königshof (peter.koenigshof@senckenberg.de)

## **IGCP 597: AMALGAMATION AND BREAKUP PANGÆA: THE TYPE EXAMPLE OF THE SUPERCONTINENT CYCLE**

<http://igcp597.igcp.info/>

Countries involved Argentina, Australia, Belgium, Brazil, Canada, Chile, Cuba, Czech Republic, France, Germany, India, Ireland, Italy, Japan, Korea, Mexico, Mongolia, Morocco, Namibia, Norway, People's Republic of China, Peru, Poland, Portugal, Romania, Russia, South Africa, Spain, Switzerland, Taiwan (of China), Turkey, United Kingdom, USA

Duration 2011-2015

Project Leader J. Brendan Murphy (bmurphy@stfx.ca)

## **IGCP 598: ENVIRONMENTAL CHANGE AND SUSTAINABILITY IN KARST SYSTEMS**

<http://igcpkarst.com>

Countries involved Albania, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Croatia, Czech Republic, Cuba, Egypt, France, Germany, Greece, Hungary, Indonesia, Iran, Ireland, Italy, Japan, Lebanon, Lithuania, Malaysia, Mexico, Netherlands, New Zealand, People's Republic of China, Philippines, Poland, Puerto Rico, Romania, Russia, Serbia and Montenegro, Slovenia, South Africa, South Korea, Spain, Switzerland, Tasmania, Turkey, Ukraine, United Kingdom, USA, Venezuela, Viet Nam

Duration 2011-2014

Project Leader Zhang Cheng (chzhang@karst.ac.cn)

## **IGCP 599: THE CHANGING EARLY EARTH**

<https://sites.google.com/a/helsinki.fi/early-earth-tectonics/>



**Countries involved** Australia, Belgium, Brazil, Cameroon, Finland, Denmark, India, Japan, Madagascar, New Zealand, Norway, People's Republic of China, Poland, South Africa, Spain, Sweden, Switzerland, Taiwan (of China), Tanzania, United Kingdom, Ukraine USA

**Duration** 2011-2014

**Project Leader** Jaana Halla (jaanahalla@gmail.com)

## **IGCP 600: METALLOGENESIS OF COLLISIONAL OROGENS**

**Countries involved** Australia, Canada, Iran, Japan, Pakistan, People's Republic of China, Spain, USA

**Proposers** Zengqian Hou (China), David Leach (USA), Jeremy Richards(Canada), Richard Goldfarb (USA)

**Duration** 2009-2014

**Project Leader** Zengqian Hou (houzengqian@126.com)

## **IGCP 601: SEISMOTECTONICS AND SEISMIC HAZARDS IN AFRICA**

<http://eost.u-strasbg.fr/~igcp601/Documents.html>

**Countries involved** Algeria, Austria, Belgium, Cameroon, Ethiopia, France, Italy, Morocco, Mozambique, Nigeria, Norway, Portugal, South Africa, USA

**Duration** 2011-2014

**Project Leader** Mustapha Meghraoui (m.meghraoui@unistra.fr)

## **IGCP 604 GROUNDWATER AND WETLANDS IN IBERO-AMERICA**

**Countries involved** Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Peru, Portugal, Spain, Uruguay

**Duration** 2011-2015

**Project Leader** Emilia Bocanegra (ebocaneg@mdp.edu.ar)

## **IGCP 606: ADDRESSING ENVIRONMENTAL AND HEALTH IMPACTS OF MAJOR AND ABANDONED MINES IN SUB-SAHARAN AFRICA**

**Countries involved** Belgium, Botswana, Burkina Faso, Cameroon, Central Africa Republic, Chad, Democratic Republic of Congo, France, Ghana, Mali, Namibia, Nigeria, Senegal, Sierra Leone, South Africa, Tanzania, United Kingdom, USA, Zambia, Zimbabwe

**Duration** 2011-2014

**Project Leader** Theo C. Davies (daviestheo2000@yahoo.com)

## **IGCP 616: TECTONIC, PALEOCLIMATIC, LANDSCAPE EVOLUTION OF CENTRAL AFRICA**

**Countries involved** Brazil, Cameroon, Central Africa Republic, Chad, Germany, Nigeria

**Proposers** Boniface Kankeu (Cameroon), R.O. Greiling (Germany), Jurgen Runge (Germany)

Duration 2012-2014

Project Leader Boniface Kankeu (bonifacekankeu@yahoo.fr)

## **IGCP 618: PALEOCLIMATE INFORMATION OBTAINED FROM PAST-RECHARGED GROUNDWATER**

Countries involved Algeria, Argentina, Australia, Benin, Brazil, Canada, Denmark, Estonia, Ethiopia, Ghana, Italy, Israel, Japan, Morocco, Mozambique, Namibia, Norway, P.R. China, Switzerland, Thailand, The Netherlands, Tunisia, UK, Uruguay, USA

Duration 2012-2016

Project Leader Dioni I. Cendón (dce@ansto.gov.au)

## **IGCP 619: CONTOURITES: PROCESSES & PRODUCTS**

Countries involved Argentina, Australia, Belgium, Brazil, Canada, Denmark, France, Germany, Ireland, Italy, Japan, Mexico, Morocco, Norway, P.R. China, Poland, Portugal, Russia, Spain, South Africa, Sweden, UK, USA

Duration 2012-2016

Project Leader Dorrik A.V. Stow (dorrik.stow@pet.hw.ac.uk; david.vanrooij@ugent.be)

## Appendix 6: Legal Status of IUGS

From the Office of the IUGS Secretariat

International Union of Geological Sciences (IUGS) was established was 1961 and is recognized as a Scientific Union Member representing the field of geology in the International Council of Science (ICSU).

IUGS has no permanent staff. Its income is derived from membership dues -- 121 Member Countries. IUGS is regarded by the US Internal Revenue Service as a 501(c)(3) not-for-profit organization, and office of the IUGS Secretariat is currently based in China. **IUGS Tax I.D. number is 521231783**

The Statutes of the organization and the most recent minutes of its membership may be found on [www.iugs.org](http://www.iugs.org). Officers as of 2013 as elected during the 3<sup>rd</sup> Joint Session of IUGS-IGC Council in Brisbane Australia, are listed on the right hand column of this page.

### President

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Dr. Marko Komac (SLOVENIA)

### Councillors

Prof. Yujiro Ogasawa (JAPAN)  
Prof. Sampat K. Tandon (INDIA)  
Ms. Wesley Hill (USA)  
Prof. Hassina Mouri (SOUTH AFRICA)

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## Appendix 7: Official Delegates from Adhering Organizations present at the Third IGC-IUGS Joint Council

**Albania (Cat. 1)**

Adil Neziraj (H)

**Argentina (Cat. 3)**Eduardo Osvaldo  
Zappettini (H)**Australia (Cat. 6)**Brian Kennett (H)  
Paul Kay (A)  
Richard Blewett  
Marita Bradshaw  
Alan Chivas  
Dave Mason  
Mike Smith (O)  
Keith Scott\***Austria (Cat. 3)**Werner E. Piller (H)  
Hans Georg Krenmayr (A)**Bangladesh (Cat. 1)  
1)**

Afia Akhtar (H)

**Belgium (Cat. 3)**

Noel Vandenberghe (H)

**Brazil (Cat. 3)**

João Larizzatti (H)

**Bulgaria (Cat. 2)**Miloslav Kacarov (H)  
Valeri Trendafilov (A)**Canada (Cat. 6)**Brian Gray (H)  
Marc D'Iorio (A)Donna Kirkwood  
Stephen Johnston  
William Mercer  
William Stiebel**Chile (Cat. 1)**Francisco Herve (H)  
Felipe Espinoza (A)**China (Cat. 7)**Zhang Hongtao (H)  
Zhu Lixin (A)  
Zhang Haiqi  
Li Ziyang  
Yan Fengzeng  
Wang Yanxin  
Zhou Shaoping  
Gu Yanfei\***Colombia (Cat. 1)**Jorge Gomez Tapias (H)  
Marlene Salazar (A)**Czech Rep. (Cat. 3)**Ondrej Babek (H)  
Zuzana Krecji (A)**Denmark (Cat. 4)**

Svend Funder (H)

**Estonia (Cat. 2)**

Helje Parnaste (H)

**Finland (Cat. 3)**Juha Karhu (H)  
Elias Ekdahl (A)  
Anu Kaskela**France (Cat. 7)**Philippe Taquet (H)  
Isabelle Cojean (A)  
Jean Dercourt  
Jean-Loup Rubino  
Oliver Vidal  
Patrick DeWever  
Pierre Nehlig**Germany (Cat. 7)**Stefan Wohnlich (H)  
Hans-Joachim Kumpel (A)  
Peter Konigshof  
F. Wolfgang Eder  
Patrick O'Brien**Hungary (Cat. 3)**Tamas Hamor (H)  
Maria Hamor-Vido  
(Observer)**India (Cat. 7)**Dhiraj Mohan Banerjee (H)  
A. Sundaramoorthy  
Ashok Kumar Singhvi  
Ashok Sahni  
Rajender Kumar Chada  
Shailesh Nayak  
Vishwapati Trivedi**Iran (Cat. 1)**

Jalil Ghalamghash (H)

**Iraq (Cat. 2)**Gorgees Kalw (H)  
Sabah Habeeb (A)  
Basma Ahmed\*  
Buthainah Al-Juboori\*  
Imad Abdulzahra\***Ireland (Cat. 4)**

Alan Jones (H)

**Israel (Cat. 2)**

Haim Gvirtzman (H)

**Italy (Cat. 7)**Attilio Boriani (H)  
Marco Amanti (A)



Antonio Brambati

Pierluigi Soddu

Fabio Trincardi

Carlo Doglioni

Domenico Rio

## Japan (Cat. 8)

Hiroshi Kitazato (H)

Ryo Matsumoto (A)

Yoichi Ezaki

Hirokazu Kato

Fumio Kurimoto

Ni-ichi Nishiwaki

Yusaku Yano

Akihiko Shibihara

## Kazakhstan (Cat. 3)

Bulat Uzhkenov (H)

## Kosovo (Cat. 2)

Ahmet Tmava (H)

Shaip Latifi (A)

## Lithuania (Cat. 1)

Jonas Satkunas (H)

Mexico (Cat. 8)

Lucca Ferrari (H)

Enrique Espinosa (A)

## Morocco (Cat. 2)

Ech Cherki Rjimati (H)

Ahmed Manar (A)

## Namibia (Cat. 1)

Gabriele Schneider (H)

## New Zealand (Cat. 3)

Ian Graham (H)

Alex Malahoff

Desmond Darby

## Nigeria (Cat. 1)

O.A.Okunlola (H)

## Norway (Cat. 3)

Arne Bjorlykke (H)

Anders Solheim (A)

## Poland (Cat. 2)

Andrzej Zelazniewicz (H)

Stefan Cwojdzinski (A)

## Portugal (Cat. 2)

Bordalo da Rocha (H)

## Romania (Cat. 3)

Mircea Sandulescu (H)

Victor Mocanu (A)

## Russia (Cat. 8)

Acad. Alexander Gliko (H)

Mikhail Fedonkin (A)

Askhab Ashabov

Mikhail Kuzmin

Nikolay Bortnikov

Valery Vernikovskiy

Victor Osipov

Victor Puchkov

## South Africa (Cat. 4)

Sharad Master (H)

Geoffrey Grantham (A)

Trishya Owen-Smith

Vusani Mathada\*

Hassina Mouri

## Korea (ROK) (Cat. 3)

Hyo-Sook Lee (H)

Bok Chul Kim (A)

Sung Won Kim\*

Weon-Seo Kee\*

Young-joo Lee\*

## Saudi Arabia (Cat. 4)

Zaben Alharbi (H)

## Serbia (Cat. 1)

Zoran Stevanovic (H)

Aleksandra Maran (A)

## Slovakia (Cat. 2)

Marian Putis (H)

Branislav Zec (A)

Jan Spisiak\*

## Slovenia (Cat. 1)

Marco Komac (H)

## Spain (Cat. 4)

Manuel Regueiro (H)

Manuel Regueiro (A)

Dolores Pereira

Jesus Martinez Frias

Ramon Carbonell

## Sweden (Cat. 3)

Vivi Vajda (H)

Erika Ingvald (A)

Anna Kim-Andersson

## Switzerland (Cat. 4)

Jean-Pierre Burg (H)

Pascal Kinder (A)

## Taiwan, China (Cat. 3)

Horng-sheng Mii (H)

Shou-Yeh Gong (A)

Chuan-Chou Shen

## Thailand (Cat. 1)

Tawsaporn Nuchanong (H)

Kanit Prasittakarnkul (A)

Lertsin Raksaskulwong\*

Dhiti Tulyatid\*

## Turkey (Cat. 3)

Prof.Dr. Ismail Omer Yilmaz (H)

## Uganda (Cat. 1)

Edward Isabirye Mugaddu (H)

## UK (Cat. 8)

Edmund Nickless (H)

Alan Lord (A)

John Ludden

Nic Bilham

Joanne Venus

Ed Derbyshire

Iain Stewart

Peter Styles



John (Jack) Hess

Thomas Dunne

Otabek Yuldashev

**USA (Cat. 8)**

Melody Brown Burkins

Patrick Leahy

Thomas Casadevall (H)

Richard Goldfarb (A)

Isabel Montanez

Peter Scholle

Suzette Kimball

Stanley Finney

**Uzbekistan (Cat. 2)**Ilkhombay Turamuratov  
(H)

Maksud Isokov (A)

**Vietnam (Cat. 1)**

Quang Hung Nguyen (H)

Duc Tin Quach (A)

H=Head Delegate; A=Alternate; \*=Observer; remainder=ordinary delegates