



INTERNATIONAL UNION OF GEOLOGICAL SCIENCES

2015 REPORT

Fostering a global voice for the geosciences

In association with ICSU and UNESCO

120+ adhering organizations

50+ affiliated organizations

THE UNION'S AIMS

The International Union of Geological Sciences (IUGS) was founded in 1961 with the mission to unite the global geological community in promoting development of the earth sciences.

The Union is the largest member organization (about 1 million earth scientists) of the International Council for Science (ICSU) and one of the world's largest scientific organizations.

Origins

2012 Strategic Plan

In 2012, IUGS redefined its missions according to a new Strategic Plan:

- Produce authoritative scientific standards
- Contribute to earth science education and public understanding of geosciences
- Represent the geological sciences in forums to inform, advise, and influence public policy and decision-makers
- Encourage and support new original ideas in basic and applied geological research
- Foster collaboration between developed and developing countries in earth science research, capacity building, and applications
- Encourage more interdisciplinary involvement within the broad spectrum of the geosciences.

For the period 2015, the Union had the following aims:

- Encourage and substantiate the participation of the Adhering organizations and National committees in promoting Geosciences
- Develop initiatives, (i.e. Resourcing Future Generations, Forensic Geology) of wide societal and applied interest
- Renew and establish closer links to UNESCO, ICSU, and Geo-Unions, as well as develop new initiatives together with these organizations
- Improve visibility of IUGS through publications and presence at scientific forums.

Present Strategic Plan

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Acknowledgement

Prof. Dr. Roland OBERHÄNSLI



FROM THE PRESIDENT

ENLARGING IUGS RELATIONSHIPS

2015 was a year of challenge with respect to visibility of geosciences in intergovernmental and non-governmental organizations.

Two main goals have been achieved during the year. One was the re-establishment of the geoscience division at UNESCO in Paris and the second is increased visibility of geosciences in ICSU, at IUCN and at the Third UN World Conference on Disaster Risk Reduction (3rd WCDRR) in Sendai, Japan.

responsible for providing lists of world-renowned experts to review geoscience aspects of applications for World Heritage status.

Under the auspices of IUGS former President Eduardo de Mulder, a group of geoscientists from IUGS, IUGG and ILP compiled a document showing the potential geo-scientific input to the Future Earth Program.

NASIC organized a Resourcing Future Generations workshop in Namibia that was funded jointly by

THE GEOSCIENCES DIVISION AT UNESCO WAS RE-ESTABLISHED. IUGS INCREASED ITS VISIBILITY IN ICSU, IUCN AND THE UN WORLD CONFERENCE IN SENDAI

Documents prepared by Geopark and IGCP/ IUGS were endorsed by the UNESCO Executive Board in the spring of 2015 and finally accepted by the UNESCO Council in November 2015. During this Council meeting, IUGS was given the opportunity to speak in support of re-establishment of Geosciences as a new program. UNESCO Council unanimously accepted the new program. As part of the re-organization of UNESCO, IUGS and IUCN agreed that IUGS would be officially

ICSU, IUGS and UNESCO. The outcome of this workshop has been published and the report is available on the IUGS website homepage. In addition to the workshop, a one-page document referring to resource use with respect to alternative energy was produced and distributed to governmental delegations to the Paris climate conference. IUGS-NASIC was invited to the at the UNEP International Resource Panel Expert Workshop on the Resource Governance in Davos.

NASIC ORGANIZED AN RFG WORKSHOP IN NAMIBIA GRANTED BY ICSU AND MATCHED BY IUGS AS WELL AS UNESCO

GOVERNING THE UNION

The Council

Meets every four years at the International Geological Congress

Representatives appointed by the Adhering Organizations from the active IUGS member countries/regions

Inactive or non-member countries/regions may send observers (without voting rights) to Council meetings.

Executive Committee

Bureau

Day-to-day decisions and responsibilities

Secretary General



Prof. José P. CALVO

President



Prof. Dr. Roland OBERHÄNSLI

Treasurer



Prof. DONG Shuwen

Past President



Prof. Alberto RICCARDI
(resigned Jan 2013)

Vice Presidents



Prof. Marko KOMAC



Prof. Yildirim DILEK

Councillors



Prof. Hassina MOURI



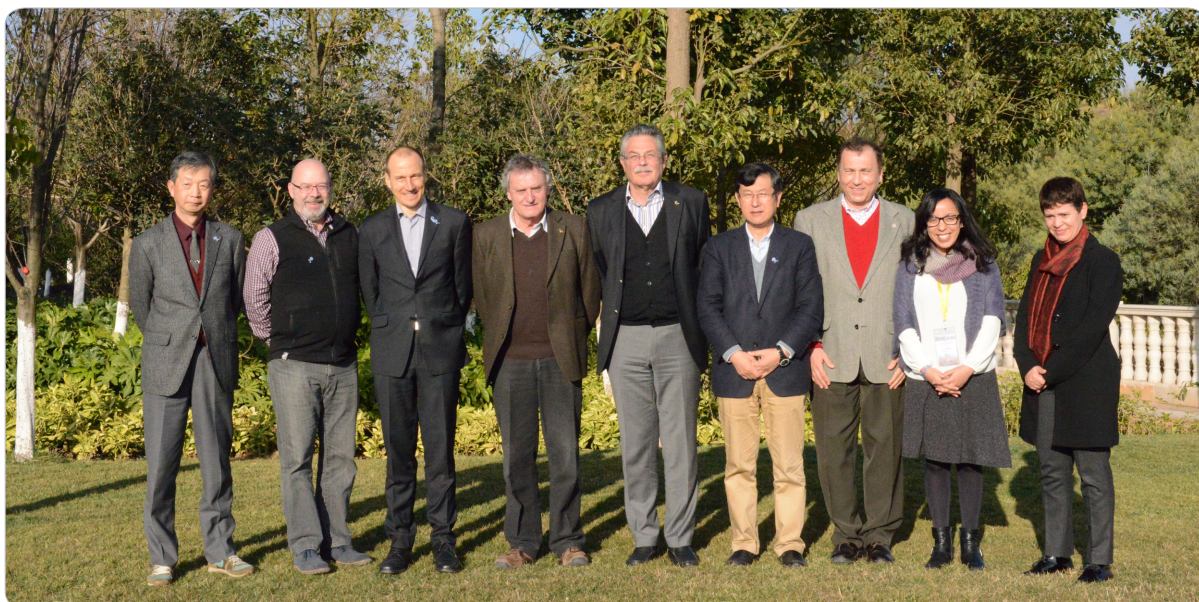
Prof. Yujiro OGAWA



Dr. Amel BARICH



Prof. Stephen JOHNSTON





Prof. José P. CALVO



FROM THE SECRETARY GENERAL HANDLING SOME CHANGES in IUGS BODIES

The organization of the 68th Executive Committee Meeting held in Vancouver, Canada on 27 – 29 January 2015 was undertaken with the assistance of members of the Secretariat. Both the agenda and the documents needed for the attendees to follow the meeting were prepared and distributed on time. The EC meeting in Vancouver ran in parallel with the Canadian minerals the Roundup, which facilitated meetings with the Canadian organizers of the Inter-congress RFG2018.


I was present at UNESCO in Paris from 24 to 27 February which gave me the opportunity to meet high ranking officers responsible for scientific affairs of this organization. The closed and open meetings dealing with evaluation and approval of IGCP Projects were also progressed in discussions on the draft Statutes for the new International Geosciences Project that should be presented for approval by the General Assembly of UNESCO in November 2015.

As a representative of IUGS, I participated in the General Assembly of the Association of European Geological Surveys (EGS) held in Brussels, 24 – 25 March where a report of the current status and policy of IUGS was presented, placing emphasis on the Initiative on Resourcing Future Generations.

The IUGS Bureau Meeting was held in Cape Town, South Africa, 25 – 26 May 2015. In addition to considering several matters relevant to the IUGS, a significant part of the meeting was devoted to discussions about the 35th International Congress, Cape Town 2016. The meeting of the International Geological Congress Committee (a joint meeting of IGC and IUGS) was held on 28-29 May. During those two days, a visit to inspection of the facilities at the Convention Center in Cape Town was carried out. This visit allowed discussions of details about the program, calendar, finances, exhibitions, IUGS activities, accommodation, and business meetings dealing with the congress.

A SIGNIFICANT PART OF THE IUGS BUREAU MEETING HELD IN CAPE TOWN WAS DEVOTED TO THE ORGANIZATION OF THE 35TH IGC'

Re-organization of some IUGS bodies was mandated at the EC meeting in Vancouver. Firstly, upgrade of the Task Group on Global Geochemical Baselines into a new IUGS Commission was discussed with members of the Task Group. Secondly,



contact with the IUGS Councillor Y. Ogawa was made in order to search the possibility to set up a Task Group on Geo-Hazards. Communication was open too with the Tec-Task Commission for suggesting some changes in the name and eventually aims of the commission. These activities promoting re-organization of some IUGS bodies were continued during my attendance to the International Conference on Geo-Heritage held in Toulouse, France, 22 – 26 September.

**'Re-ORGANIZATION OF SOME IUGS BODIES
HAS BEEN RUNNING THROUGHOUT 2015.
THE MANDATE IS MAINLY FOCUSED ON
UPGRADING OF SOME IUGS BODIES.**

Recovery of adhering organizations to IUGS membership was prioritised during 2015 with an emphasis on South American and African countries. Some progress was achieved though there are still blanks in the map.

The IUGS Bureau Meeting was held in Jixian, China, 21 – 24 October 2015. Some key points developed during the meeting concerned the publications policy

of the Union and progress in the participation of IUGS in the 35th IGC on Cape Town.

A new IUGS brochure was prepared in close collaboration with Brian Marker, Chair of the Publications Committee. The brochure will be produced mainly in electronic format thus enabling more extensive display of news and/or organizational aspects dealing with IUGS.

Attendance to the ceremony of the Golden Spike of the GSSP for the base of the Santonian in Olazagutia (Navarra region), northern Spain on 27 November 2016, was an enjoyable experience.

FROM THE TREASURER



Prof. DONG Shuwen



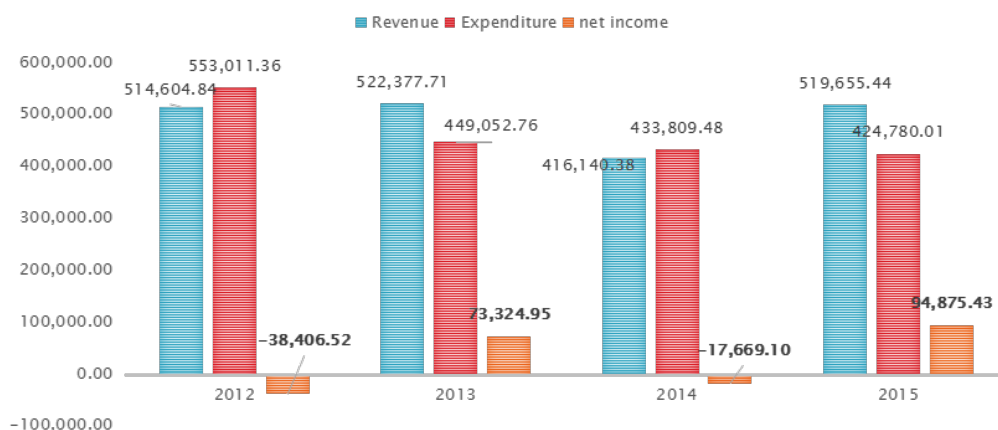
WEN Jun

General Financial Situation of IUGS

During the period from 01/01/2015 to 31/12/2015, IUGS was in a healthy financial position. The revenue and expenditure were USD 519,655.44 and USD 424,780.01 respectively, thus contributing a net income of USD 94,875.43. Therefore IUGS had revived financially after the negative net income in the previous year. This was a consequence of the receipt of more dues combined with cuts in unnecessary expenditure.

The table below reflects more detailed information of the financial situation during the recent four years.

REV. AND EXP. DURING 2012–2015



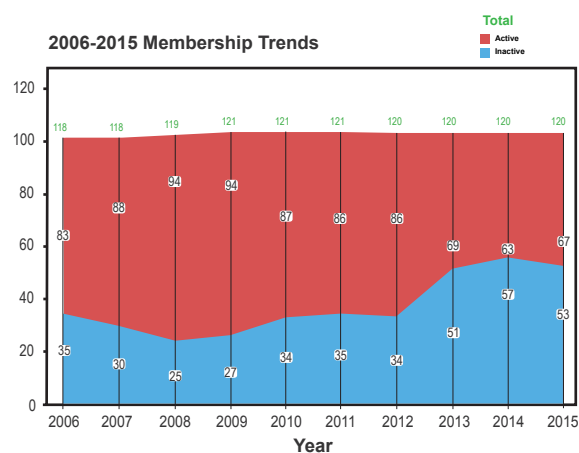
Description of Income

In comparison with the previous year, total revenue increased by USD 103,515.06. Membership receipts increased USD 82,727.54. due to several members, e.g. France, Italy, India, etc., making payments for both the previous and current dues during this year.

It is noteworthy that several countries, like Greece, Philippines, Kazakhstan, Zambia and Tanzania changed their status from “Inactive” to “Active” IUGS members. Likewise, Peru, Austria and Gambia changed their status from “Pending” to “Active” by the end of 2015.

The table on the right side reflects detailed information of the income situation in 2014 and 2015.

		Amount(USD)	
		2015	2014
Income			
Membership Fees			
	Previous years	99,847.51	59,256.68
	Current year	348,474.17	306,337.46
		448,321.68	365,594.14
Contribution from UNESCO			
	final payment for last year	4,967.00	16,834.00
	1st payment for current year	59,952.00	24,962.00
		64,919.00	41,796.00
Other Income		6,414.76	8,750.24
Total Income		519,655.44	416,140.38

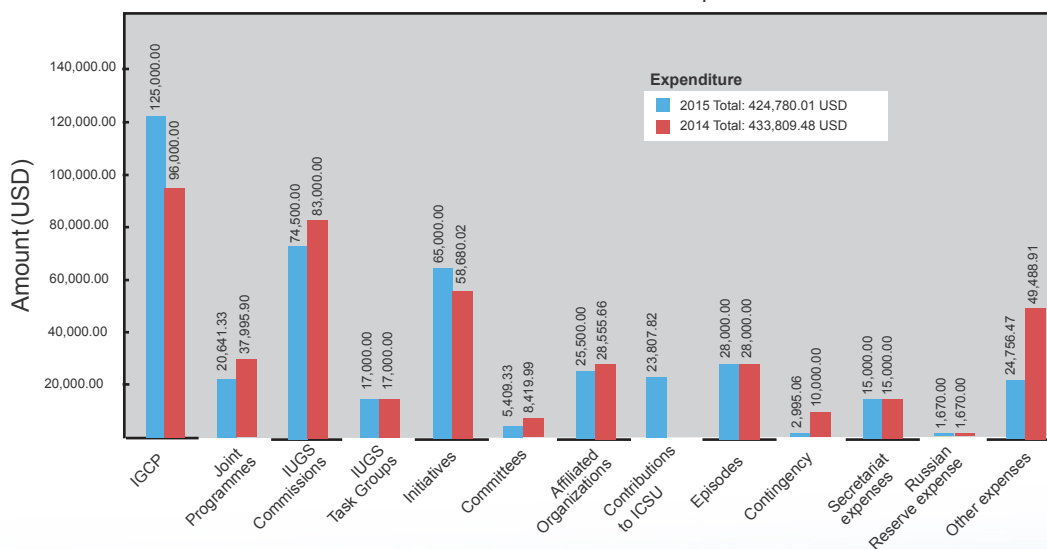


Description of Expenditure

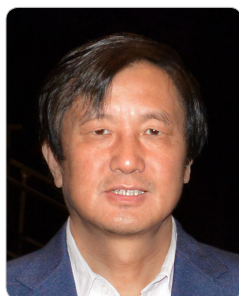
Almost all projects in the allocation table have been paid except IGCP 608, 624, 641 and 650. The payment to ICSU includes the dues of IUGS

in 2015 and 2014, which seems have been overspent. The payment to ICSU includes the dues of IUGS in 2015 and 2014, which seems have been overspent.

The table below reflects more detailed information of the expenditure situation in 2014 and 2015.



WANG Wei
Director of the
IUGS Secretariat



PERMANENT SECRETARIAT

The IUGS Secretariat is hosted by the Chinese Academy of Geological Sciences (CAGS, NO. 26, Baiwanzhuang Road, Beijing 100037, China) under the Ministry of Land and Resources of the People's Republic of China (MLR).

In 2015, the Secretariat consisted of Mr. Wang Wei (Director), Ms. Anne Liinamaa-Dehls (part-time Executive Secretary), Mr. Chen Zhu (IT Specialist), Ms. Gu Yanfei (full-time Secretary), Ms. Xu Yaqi (full-time Secretary) and Ms. Li Wei (part-time Secretary).

During the past year, the Secretariat assisted in the organization of several regular administrative meetings, including the 68th EC Meeting (Vancouver, Jan. 27-29, 2015), and two Bureau Meetings (Cape Town, May 25-29, 2015 and Jixian County of Tianjin, Oct. 22-25, 2015). The Secretariat went to the Stone Forest Global Geopark two times before the convening of the 69th EC Meeting (Kunming, Jan. 18-22, 2016) for preparations.

The Secretariat arranged and manned IUGS exhibits at the GSA 2015 Annual Meeting in Baltimore (Oct. 31-Nov. 4, 2015), and displayed IUGS 2013-2014 Annual Report, IUGS flyers, IUGS badges and the 35th IGC brochures.

Major achievements of the Secretariat in 2015 includes: design and deployment of the IUGS Website and APP; updating of the Contact Database and strengthening links with IUGS bodies; improved the IUGS improvements to Management System; revision and dispatch of the 2013-2014 IUGS Annual Report; assisting in membership maintenance, distributing E-Bulletins monthly to over 17000 persons; and distribution of New Year's E-Cards.

Besides, the Secretariat designed and produced many new outreach materials, including 3000 magnetic stickers, 1000 rulers, notebooks, ties and vests, etc.

As for the work related to the 35th IGC, the Secretariat: booked exhibition spaces for IUGS booth at the GeoExpo during the 35th IGC with a total area of 72 m² and designed the layout of the booth; sent a call for proposals on revision of the Statutes and Bylaws of IUGS and IGC; drafted a provisional program for the IUGS events during the 35th IGC; prepared documents to be provided at the Joint IUGS-IGC Council Meeting; designed IUGS gifts for important and general occasions; collected overviews and guidelines for the five IUGS Awards to be granted; and drafted a letter of issues to be discussed and approved by the IUGS-IGC Council Meeting.



Ms. LI Wei
Secretary



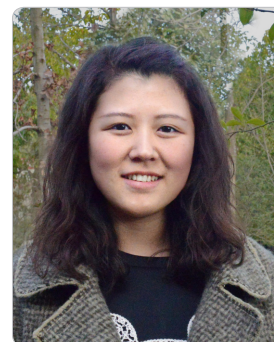
Ms. GU Yanfei
Secretary



Ms. Anne LIINAMAA-DEHLS
Executive Secretary

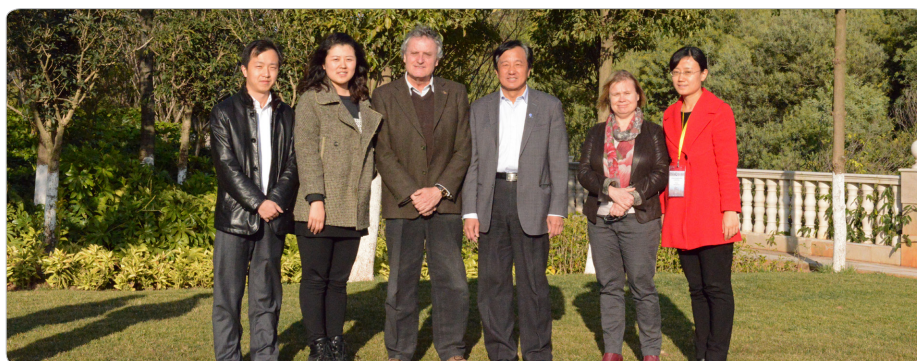


Mr. CHEN Zhu
IT Specialist



Ms. XU Yaqi
Secretary

The entire staff would like to extend the deepest appreciation to Mr. Li Zhijian, the former Secretariat Director who retired in September 2013, for his help in ensuring smooth transition of the Secretariat to China.





2015 HIGHLIGHTS

JANUARY 2015

The 68th Executive Committee of the IUGS was held in Vancouver, Canada, graciously hosted by the organizers of the Mineral Exploration Roundup, with sponsorship by Tourism Vancouver and the City of Vancouver. About 50 individuals attended all or portions of the 3-day IUGS meeting, which joined representatives from the IUGS Scientific Bodies, Affiliated Organizations, and National Committees. The Roundup brings together prospectors, geoscientists, investors, suppliers and all those interested in the mineral exploration industry. On 2015, over 6,400 participants from 37 countries attended this event.

Upgrade of the Global Geochemical Baselines Task Group into a new IUGS Commission was discussed by the EC. The proposal runs together with other reorganization initiatives, such as merging of tasks groups dealing with geological heritage or creation of a new task group on geohazards.

The International Council for Science (ICSU) granted €30,000 to IUGS for a proposal dealing with implementation of the Resourcing Future Generation Initiative.

FEBRUARY 2015

The IGCP Council met in Paris, 24 – 27 February. The IGCP Scientific Advisory Board evaluated new proposals for projects as well as the reports from projects in progress. Coincident with the celebration of the IGCP, the Geopark community, supported by about 50 Member States and representatives of the International Geoscience Program (IGCP) and IUGS, finalized the new statutes for the International Geopark Geoscience Program IGGP at the UNESCO Headquarters. This new structure was proposed by IUGS and UNESCO Member States to gather the Global

Geoparks Network (GGN) and the IGCP as two pillars under a joint umbrella, the IGGP. The GGN remains mostly independent of the IGCP but has asked IUGS for support in reviewing the geoscientific aspects in applications and revisions for UNESCO Global Geoparks. The name “International Geoscience Program”, its acronym “IGCP” and its logo shall be kept.

MARCH 2015


The UN World Conference on Disaster Risk Reduction was held in Sendai, Japan, March 14 – 18. Several symposia addressed specific geoscientific issues. The event was supported by the International Union of Geological Sciences (IUGS) and several Japanese scientific and technological institutions. IUGS councillor Yuriyo Ogawa participated in the organization as well as the symposium program that ended with a joint paper by him and IUGS President Roland Oberhänsli.

IUGS participated in the 38th EuroGeoSurveys (EGS) meeting held in Brussels, March 24–25. The Director’s Workshop included in the meeting was focused on the topic “Geological infrastructures priorities in Africa and beyond”. IUGS Secretary General José P. Calvo gave a talk on the IUGS Resourcing Future Generations Initiative, and provided updated information on the current activities of the Union.

The Heritage Stone Task Group (HSTG) was represented by Lola Pereira at the 7th Parmenides Conference (Mediterranean space of knowledge) held in Dubrovnik, Croatia, March 17 – 19.

APRIL 2015

Björn Schouenborg, Lola Pereira, Sabina Kramar, and Barry Cooper, all from the Heritage Stone Task Group (HSTG) board, convened a HSTG session on Natural Stone



Research and Heritage Stone designation at the EGU General Assembly, Vienna (Austria), on April 15. Contributions from fourteen countries were presented, with possible examples of Global Heritage Stone Resources.

IUGS called for interested partners/evaluators to review the geological interest of new proposed sites to be evaluated by the International Union for Conservation of Nature (IUCN) for the 40th Session of the World Heritage (WH) Committee in June 2016. IUGS needed to identify about 8–10 IUGS partners per nominated site who could provide a desktop review.

MAY 2015

The meetings of the Committee of the International Geological Congress (IGCC) and the Bureau of the International Union of Geological Sciences were held in Cape Town, 25 – 30 May. The meetings were hosted by the South African Local Organization Committee (LOC) of the 35th IGC. Emphasis was made on organizational aspects of the congress including a visit to the conference venue.

A call for evaluators of IUCN applications for World Heritage Sites was posted on the IUGS website.

JUNE 2015

The 40th Conference of the International Commission on the History of Geological Sciences (INHIGEO) was held on June 24–27 at the Geosciences International Conference Center of the Chinese University of Geoscience in Beijing.

A workshop and field training in Forensic Geology was held in Messina, Italy, 10–11 June. This included the first MSc course on Forensic Geology. Training was provided to forensic

scientists, geologists and police/law enforcement officers.

The journal *Episodes* hit Impact Factor 2.0, a significant rise over recent years. The journal had been partly strengthened by thematic issues but also by high quality papers from all. Other steps towards modernization of the journal are now in progress.


The first Heritage Stone Task Group volume of the Geological Society Special Publication, dedicated to Global Stone Resources, was launched, with papers on almost 20 different natural stones from all over the world. Another special issue, edited by D. Pereira, S. Kramar and B. Cooper, was published in the June issue of *Episodes*.

The Working Group on Drinking Water of the IUGS Commission on Geoscience for Environmental Management (IUGS–GEM) and the Geological Survey of Lithuania jointly organized an International scientific seminar titled “Use of Fresh Groundwater for Drinking Water Supplies to Populations in Emergency Situations”, in Vilnius, on June 3–5.

JULY 2015

An IUGS–RFG workshop was organized in Namibia, July 25–30. The workshop was held on the GocheGanas wilderness resort and was financially supported by IUGS, UNESCO and an ICSU grant to IUGS. Discussion led to the immediate production of two short documents entitled ‘Resourcing Future Generations—A Global Effort to Meet the World’s Future Needs Head-on’ and ‘The importance of geoscience data in attracting mining investment in Africa; Lessons from Namibia’.

The nomination of Portland Stone from the United Kingdom for Global Heritage Stone



status was assessed by independent reviewers chosen by the Heritage Stone Task Group Board. They recommended approval.

AUGUST 2015

Registration for the 35th International Geological Congress opened in August. 220 symposium proposals were submitted by that date.

The YES Network organized a joint session with the C12.16 Commission on Geoparks at the International Geographical Union Regional Conference in Moscow, Russia, August 17–21. The session was under the theme “Geoheritage, A Recorder of the Global Change along the Silk Road for Future Sustainable Development”.

SEPTEMBER 2015

The IUGS “Émile Argand” Award was announced. This award substituted the previously called “Steno Award” due to the fact that the Danish Geological Society traditionally distributes a prize of the same name. Terms of reference of the award were posted in the IUGS e-bulletin.

The Conference on “Geoheritage Inventories: Challenges, Achievements and Alternatives” was held in Toulouse, France, 22 – 26 September. Together with the IUGS Task Group on Geoheritage (TGG), representatives of UNESCO and IUCN had a major role, explaining the revised rules for evaluating new applications. The IUGS Heritage Stone Task Group (HSTG) was also present at the conference.

The presidents of the European Federation of Geologists and the International Association for Geoethics signed a

Memorandum of Understanding on 16 September.

OCTOBER 2015

The IUGS Bureau, enlarged with the presence of the two IUGS Vice-Presidents, held its Fall meeting in Jixian, China, on 21 – 26 October. Most of the items discussed during the meeting concerned the Publications Committee and the organization of the 35th International Geological Congress in Cape Town.


The International Conference on Geoethics, organized by the AGID Working Group for Geoethics, was held in Prague and Příbram, Czech Republic, from 9 to 19 October.

NOVEMBER 2015

The Statutes of the International Geosciences and Geoparks Programme (IGGP) were unanimously approved by the UNESCO Council in its General Assembly held in Paris, 17 November. The IUGS President was invited to speak to the Council. The recommended new structure within UNESCO was strongly endorsed to ensure that literacy in Earth Science has a high priority.

A conference on Future of Earth-Space Science and Education (Future ESSE) was held in the Abdus Salam International Centre of Theoretical Physics (ICTP) in Trieste (Italy) November 2–6. The conference was organized by IUGG and was followed by the annual meeting of ICSU’s GeoUnions (6 - 7 November).

A new Global Stratotype Section and Point (GSSP) that defines the base of the Santonian Stage (Upper Cretaceous Series, Cretaceous System) was formally



inaugurated. The GSSP is located in a quarry at Olazagutia, in Navarra, Spain. The ceremony included the placing of a 'golden spike' in the section at the level of the boundary.

GSA2015 was organized in Baltimore on 1 – 4 November. IUGS was present at the conference displaying Union flyers and offering updated information to participants in the event.

DECEMBER 2015

The journal *Episodes* published a December Special Issue on Ophiolites. The issue was guest edited by IUGS

IUGS BODIES

THE REAL LIFE OF THE UNION

The International Union of Geological Sciences promotes and encourages the study of geological problems, especially those of world-wide significance throughout the activities of IUGS Commissions, Task Groups and Initiatives.

At present IUGS gives special consideration to:

- International standards;
- Geoscience education;
- Geoscience information;
- Environmental management.

IUGS believes that it is of mutual benefit to establish close links with other organizations engaged in geosciences activities and especially those organizations whose work relates to some of the major activities of IUGS.

The list of currently active IUGS bodies testifies to these major aims of the Union. Links allowing description of the organization and activities of the IUGS bodies are provided on the IUGS website (www.iugs.org):

VicePresident Yildirim Dilek. This issue is only of interest to ophiolite specialists but is relevant to all geoscientists who are working to understand the detailed dynamics of the oceanic crust and orogenic belts.

IAGETH distributed a statement about the Paris Agreement on Climate Change. The document emphasized that the scientific community plays - and will play - a vital role for Society, which is not only based on the generation of scientific knowledge, but also in taking into account and facing societal and ethical issues.

Scientific Commissions

Geoscience Education, Training & Technology Transfer (COGE)

Geoscience for Environmental Management (GEM)

History of Geological Sciences (INHIGEO)

Management and Application of Geoscience Information (CGI)

International Commission on Stratigraphy (ICS)

Tectonics and Structural Geology (TECTASK)

Task Groups

Global Geochemical Baselines (TGGGB)

Heritage Stone Task Group (HSTG)

Task Group on Geoheritage (TGG)

Global Geoscience Professionalism (TGGP)

Initiatives

Forensic Geology Initiative (FGI)

Resourcing Future Generations (RFG)

Members

Adhering Organizations

Affiliated Organizations

Affiliated Organizations

Edmund NICKLESS
Chair of NASIC



IUGS INITIATIVES

ADDING NEW IDEAS TO SERVE GEOSCIENCE COMMUNITY

Resourcing Future Generations

The last forty years has seen some countries experience unprecedented improvements in living standards as measured against virtually any metric: mortality rates fell, life expectancies rose and per capita incomes swelled. Technological advances drove a rapid increase in the discovery, production and utilisation of water and energy resources, as well as numerous mineral commodities, from construction staples to nuclear fuels and metals for advanced applications. The demand for raw materials to satisfy the higher standards of living that the developing world has every right to expect is apparently insatiable and challenges from where these materials are to come.


During 2015, implementation of the IUGS Resourcing Future Generations initiative, which is being overseen by the New Activities Strategic Implementation Committee, made significant progress. We have built on the Resourcing Future Generations White Paper: Mineral Resources and Future Supply¹ launched in October 2014 at the China Mining meeting in Tianjin: and, in July, a group of seventeen geoscientists and social scientists, including economists, met on retreat at the Goche Ganas Nature Reserve near Windhoek, Namibia. The cost of the workshop was supported by funding by IUGS and grants from the International Council for Science (ICSU) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO).



The Namibia workshop group

L-R Fabio Masotti, Saleem Ali, Anna Littleboy, Gabi Schneider, Edmund Nickless, Larry Meinert, Judith Kinnaid, Damien Giurco, Graham Brown, Nick Arndt, Natalia Yakkkovleva, Janet Salem, Roland Oberhänsli and Alecos Demetriades

Not present: Ray Durrheim, Maria Amelia Enríquez and Daniel Nyanganyura



Over five days we discussed one of the major challenges facing global society, namely, continuity of raw material supply over the coming decades, by exploring three themes:

- Balancing resource supply and demand in the 21st century
- The challenge of mineral supply: accessing new resources from the Earth

- Building additional capacity to facilitate responsible development in less developed nations

Our discussions were assisted by the attendance of Obeth Kandjoze , the Namibian Minister for Mines and Energy and Veston Malango, Chief Executive Officer of the Chamber of Mines of Namibia.



L-R: Gabi Schneider, Edmund Nickless, Obeth Kandjoze, Roland Oberhänsli and Veston Malango



In brief we recommend

- Developing international guidelines for planetary mineral consumption
- Raising awareness of the impacts of mineral consumption from source to product. Individuals and nations need to be accountable for their resource use
- Supporting industry investment and research into new mineral exploration and extraction technologies
- Developing global best practice for responsible mineral resource development

The discussion and our recommendations are brought together in a 78-page report² and summarised in a one-page briefing note for legislators, policy advisers and opinion formers. Action is needed now to address future supply problems that are unpredictable in time and detail, but foreseeable and inevitable. Over the coming year we will continue to raise awareness of RFG with other stakeholders. Those include the International Union for Conservation of Nature and Natural Resources, and the International Resource Panel of the United Nations Environment Programme, as well as communities such as engineers and those with relevant experience and expertise, both within and beyond IUGS. A two-day symposium on resourcing future

generations is being planned for the 35th IGC at Cape Town, South Africa from 27 August to 4 September 2016 and the topic is the basis of RFG2018 to be held in Vancouver, British Columbia in June of that year.

1. Nickless, E., Bloodworth, A., Meinert, L., Giurco, D., Mohr, S., Littleboy, A. Resourcing Future Generations White Paper: Mineral Resources and Future Supply. International Union of Geological Sciences. 2014, 30pp. http://iugs.org/uploads/Consultation%20Paper%202014_Oct_12_AL_EN_DG%20FINAL.swf and http://iugs.org/uploads/Consultation%20Paper%202014_Oct_12_AL_EN_DG%20FINAL.pdf

Additional background and an invitation to comment is at <http://www.geolsoc.org.uk/RFG>

2. Nickless, E., Ali, S., Arndt, N., Brown, G., Demetriades, A., Durrheim, R., Enriquez M.A., Giurco, D., Kinnaid, J., Littleboy, A., Masotti, F., Meinert, L., Nyanganyura, D., Oberhänsli, R., Salem, J., Schneider, G., Yakovleva, N. Resourcing Future Generations: A Global Effort to Meet The World's Future Needs Head-on. International Union of Geological Sciences. 2015, 78pp. <http://iugs.org/uploads/RFG%20Report-sm.pdf>

FORENSIC GEOLOGY – LAURANCE DONNELLY



Throughout 2015, IUGS-IFG continued the development and promotion of forensic geology around the world by the provision of outreach, knowledge transfer and training events. The IFG Committee expanded by the recruitment of 3 new members giving 28 members in total, including 14 officers and 14 global representatives. There were at least 47 IUGS-IFG events held in 2015. Particularly notable was the establishment of a new MSc in Forensic Geology at the Università degli Studi di Messina, the first of its kind in Italy. IUGS-IFG also provided informal geological and geophysical advice for the, Australian Facility for Taphonomic Experimental Research (AFTER). IUGS-IFG committee members were contacted to provide geological advice and operational support to assist the Police with some investigations including ground searches for graves and other burials related to crime, terrorism and organised crime.

In 2015, IUGS-IFG took part in Continuation of Professional Development (CPD), formal training, outreach and knowledge exchange events in 19 countries. For the first time forensic geology associations and events were established in China and Hong Kong.

There was a significant increase in public, press and media interests in forensic geology giving positive publicity to forensic geology. IUGS-IFG web site (www.forensicgeologyinternational.org) was expanded. The Geoforensic International Network (GIN), which is part of IUGS-IFG, brings together forensic geologists, geoscientists and invited police/law enforcement officers from around the world, who have a desire and interest in the development of forensic geology.



Forensic Geology Training, Messina, Sicily, Italy

Brian Marker
Chair of IUGS
Publications Committee



PUBLICATIONS

Principal tasks for the IUGS Publications Committee during 2015 were to:

- continue rebuilding the IUGS journal Episodes to (and beyond) its pre-2012 status;
- collaborate with an Ad-hoc Review of the Memorandum of Understanding between IUGS and the Geological Society of India (GSI) for the publication of Episodes;
- investigate the costs and steps towards online only, and online first, publication of Episodes;
- expand the Editorial Board of Episodes to cover the broad range of topics covered by the journal; and
- secure a forward programme of strong thematic issues of Episodes.


Amel Barich replaced Yildirim Dilek as the IUGS Councillor assigned to the Committee so that Yildirim could focus on the Ad-Hoc Review. The Committee Meeting took place in Bangalore in April 2015 to discuss the future of Episodes and meet the GSI production management team. The Review was undertaken alongside that meeting.

Four issues of Episodes were published during 2015 with alternating general and thematic issues. The latter were devoted to heritage stone (June 2015) and ophiolites (December). It is clear that these issues attract more attention, overall, than general issues through visits to the Episodes website and media such as ResearchGate. Recovery of the impact factor from an all time low of 0.95 in 2012 continued,

rising from 1.4 at the end of 2014 to 2.0 at mid 2015. Also, numbers of manuscripts submitted increased significantly. In 2013 there were barely enough to fill each issue but the Editor is now able to reject around 60% of submissions leading to significant improvement in quality. This has been due to the hard work of our Editor Dr Fareeduddin.

There has been a tendency for some thematic issues to exceed the allowable page number with consequent cost over-runs and for late papers to cause problems for the production management team. Guidance to guest editors was amended to stress the importance of finding additional funds if a larger than normal issue is expected and for late papers to be deferred to later issues of the journal.

Membership of the Episodes Editorial Board expanded from 10 at the start of the year to 20 at the end but about 10 more are needed to cover the range of submitted topics and improve geographical and gender balances. Weaknesses are too few members from North and South America, Africa and Australasia. The gender balance is at present 60% male and 40% female so a 50-50 ratio is in sight. Expressions of interest were called for in the November 2015 IUGS E-Bulletin but with little response. Only when the Board is completed can a proper policy



of rotation of members be implemented. Guidance notes to members of the Editorial Board, contributors to the journal and guest editors have been maintained and updated as necessary. A guidance note for advertisers and a statement of benefits for authors were prepared but await decisions on the future of the journal.

The Episodes website was upgraded in March 2015. It contains pdf. files for all papers from March 2009 onwards. IUGS has registered for issuing of DOI numbers to papers beginning with the December 2015 issue. The IUGS Logo (and, if appropriate, that of the International Geoscience Programme) are now included on the front page of each paper with the dates of receipt and acceptance of papers.

The Committee is grateful that our President, Roland Oberhänsli, and Patrick McKeever (UNESCO) wrote to the leaders of IGCP projects to remind them of the need to publish reports in Episodes and books with the GSL. A few replies resulted. Hopefully, more will arrive soon.

In 2014, the Publications Committee identified a lack of a publications policy and ethics statement for Episodes. A draft has been prepared. It will be sent to the IUGS for consideration during 2016. Also a statement of the future mission and scope of Episodes has been drafted.

IUGS expressed a wish to modernise the website. The Publications Committee estimated that would probably require about US\$10,000 and advised that the template of a new site should be based in English to facilitate any possible later transfers of responsibility. It was also considered that a fluent speaker of English should be available to check material placed on the site.

The Chairman has been in regular contact with the Commissioning Editor at the Geological Society (GSL) Publishing House. Four books were published during the year.

- Geodynamic Processes in the Andes, 32°-34° South
- Global Heritage Stone: Towards International Recognition of Building and Ornamental Stones
- Magnetic susceptibility application: a window onto ancient environments and climatic variations
- Sedimentary Basins and Crustal Processes at Continental Margins

A new proposal is now in preparation.



COLLABORATIVE JOINT PROJECTS

INTERNATIONAL GEOSCIENCE PROGRAMME (IGCP)

Since its inception in 1972, IGCP has been an international programme in the UNESCO system and a “flagship” activity within its earth sciences sector. Its ‘international programme’ status within the UNESCO, as opposed to being an inter-governmental programme, has been highly beneficial in providing the IGCP with the freedom of operation, involving earth scientists of the global community in its capacity-building activities.

IUGS and UNESCO are equal partners in the delivery of IGCP’s mandate as a global scientific entity with a main mission for “geoscience in the service of society”. The IGCP has evolved in its 43 years of existence, during which its objectives and structure have changed several times.

On November 17, the General Conference of UNESCO at its 38th session unanimously adopted the statutes of the new International Geoscience and Geoparks Programme (IGGP). These statutes replaced the previous statutes of the International Geoscience Programme that remained essentially unchanged since 1972. Operational Guidelines for the International Geoscience Programme, which keep the traditional acronym IGCP, will be developed throughout 2016. New officers of the Programme will be elected in 2016 as well.

In 2015, 20 projects received financial support from UNESCO and IUGS. Project participants came from 133 countries. In general both on

project leader and project participant level about 25-30% of the scientists are women. Overall about 55% of the participating scientists are coming from developing nations.

INTERNATIONAL LITHOSPHERE PROGRAMME (ILP)

The International Lithosphere Program (ILP) seeks to elucidate the nature, dynamics, origin and evolution of the lithosphere through international, multidisciplinary geoscience research projects and coordinating committees. The ILP is charged with promoting multidisciplinary research projects of interest to both the geological (IUGS) and geophysical (IUGG) communities.

In April 2015, a business meeting was held at EGU in Vienna, Austria, and a meeting of all ILP TF and CC leaders as well as the Bureau members took place in Potsdam, Germany to celebrate the 35th anniversary of ILP in September 2015. During this meeting reports on the past funding period have been presented by the different TF and CC and new proposals have been suggested. Subsequently a Bureau Meeting took place (minutes below) when decisions have been taken by the Bureau on which newly proposed TF and CC shall be funded and on who shall receive the 2016 Flinn-Hart Award. Furthermore elections for the position of the ILP president for the next 5-year period have been carried out.



Congress website: <http://www.35igc.org>

It's been over 64 years since the International Geological Congress (IGC) was last held in Africa. The 35th IGC will be hosted in Cape Town, South Africa from 28 August to 4 September 2016. During 2015 the Local Organising Committee made progress towards finalising the Scientific Programme, opening the online abstract submission portal, publishing the Third Announcement and opening of Registration. During late May, members of the International Union of Geological Sciences (IUGS) Executive

Bureau visited Cape Town to meet the Local Organising Committee and inspect the Cape Town International Convention Centre venue for the event. The IUGS President, Prof. Dr. Roland Oberhänsli, the Secretary-General, Prof. José P. Calvo and the Treasurer, Prof. Shuwen Dong were supported by members of the IUGS Secretariat from Beijing. The visitors had an opportunity to tour the Cape peninsula and winelands to experience some of the geological superlatives and scenic splendour that awaits delegates in August 2016.



The Third Announcement was lodged on the 35th IGC website in early October 2015 and was circulated to the IUGS for distribution to its adhering and affiliated organisations. The document provided more detail on important dates and deadlines, the Scientific Programme, short courses/workshops, field trips and GeoHost support programme.

The Scientific Programme encompasses 50 themes with abstracts being submitted towards over 200 symposia. The management of themes is being undertaken by 182 Theme Champions who are taking ownership of these topics and attracting contributors. Twenty two short courses or workshops have been organised and will be hosted at the CTICC during the weekend prior to the welcome reception on 28 August 2015.

Registration opened on 1 September 2015 and the discounted “Super Early Bird” rate exceeded expectations by attracting over 450 registrations before the “Early Bird” registration rates were introduced on 2 November. The continued weakening of the South African Rand (ZAR) against major currencies has made the 35th IGC even more affordable to most prospective delegates. The accommodation offered on the website (<http://www.35igc.org/Accommodation>) represents unbeatable value!

The itineraries of field trips that will take delegates to spectacular geological sites across South Africa and other African countries have been refined. The ten-day ‘Great Southern African Train Geo-Safari’ from Cape Town to Victoria Falls, offered by JB Train Tours on the



Shongololo Express Heritage Train, has been very well supported. The delegates that take part in the other 'flagship' trips; the "Geological Summits of Africa" and traverse through the East African Rift Valley in Tanzania, will be treated to unique experiences. Every aspect of South African geology will be covered by 38 field trips and many others will expose delegates to the geological superlatives of Namibia (7 trips), Botswana, Angola, Lesotho, Ghana (2), Mali and Zambia (2).



Members of the IUGS Executive Committee and Secretariat took on a geological excursion around the Cape peninsula area. The geological development of this region was explained by Prof John Rogers (left) to Xu Yaqi and Wang Wei (IUGS Secretariat), José Calvo, Greg Botha (Secretary-General, 35th IGC), Roli Oberhänsli and Shuwen Dong. (photo Morgan Morris)

PROVISIONAL PROGRAMME AT A GLANCE

Pre-Congress Field Trips	Thu. 18 to Sat. 27 Aug. 2016
Workshops, Short Courses	Sat. 27 and Sun. 28 Aug. 2016
Registration opens, Exhibition setup and Opening	Sun. 28 Aug. 2016
35TH IGC welcome reception	Sun. Evening, 28 Aug. 2016
Opening Ceremony and first symposium	Mon. 29 Aug. 2016
Scientific Programme	Mon. 29 Aug. to Fri. 2 Sep. 2016
Business meetings	Evenings of Mon. 29 Aug. to Thu. 1 Sep. 2016
Congress dinner	Thu. 1 Sep. 2016
Last symposium & Closing Ceremony	Fri. 2 Sep. 2016
Post-Congress Field Trips	Sat. 3 to Tue. 13 Sep. 2016



Dr. John THOMPSON
Chair of RFG 2018



THE FIRST IUGS ORGANIZED INTER- CONGRESS INTERNATIONAL CONFERENCE



The Local Organizing Committee welcomes you to the Resources for Future Generations (RFG 2018) conference that will be held in Vancouver, British Columbia, Canada in June 2018. The RFG2018 conference is an outgrowth of collaboration between the IUGS and a number of organizations representing Canada's geoscience and geo-engineering communities. The 2018 event is the first effort by IUGS to hold thematic inter-congress meetings for the international community. RFG2018 takes its theme from the new IUGS initiative, "Resourcing Future Generations", designed to mobilize scientists, policy-makers and other stakeholders to explore sustainability issues.

The vision for this conference is to provide a venue and program where the globe community can meet to freely exchange their expertise, knowledge, and interests on topics related to the sustainable development of Mineral Resources, Energy and Water.

Vancouver takes pride in welcoming visitors to a clean, green, safe, and easily accessible city. A vast multicultural population, endless activities, and excellent infrastructure, Vancouver is welcoming venue to all. We hope you can join us at Resources for Future Generations, from June 17–21, 2018, near the Canada Place sails at the Vancouver Convention Centre.

(Website:<http://rfg2018.org/en.aspx>)



36th INTERNATIONAL GEOLOGICAL CONGRESS 2-8 MARCH 2020 , DELHI, INDIA

India along with co-host countries Bangladesh, Nepal, Pakistan and Sri Lanka is preparing to host the 36th Session of IGC at Delhi from 2-8 March 2020. The Indian subcontinent is endowed with spectacular ensemble of geology as well as a rich cultural heritage. It will be an enchanting destination for the geoscientists in 2020.

India has started preparing in earnest for the Congress and is determined to make it one of the most memorable IGC's for the geoscientific fraternity. The event will be hosted by India at a time when the World is, increasingly under threat due to profound environmental changes associated with increased impact of anthropogenic activities and the evolving climate system. It will be expected that earth scientists should address some of these issues. It will be our endeavor to make the 36th IGC a major geoscientific event and a beacon for geoscientific advancement in the decade that will follow after.

The Government of India, realizing the importance of Earth Sciences, is generously funding preparatory activities initiated for the 36th IGC. Government approval has been for setting up a society '36IGC'. The society will be registered soon under Indian Society Registration Act to assume the financial and legal liability of hosting the congress. Dr. Shailesh Nayak, former Secretary, Ministry of Earth Sciences, Government of India and the Director General of the Geological Survey of India have been appointed as President and Co-President for 36th IGC, respectively. The Secretary General for the 36th IGC will be shortly appointed and the local organizing committee will be convened. The 36th IGC Secretariat is coordinating all activities dealing with the preparations for the Congress. It has secured a large booth at the 35th IGC Geo-expo to showcase India as a favourable destination for earth scientists. As the next host country India is preparing to participate prominently during the 35th IGC at Cape Town.





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