



# INTERNATIONAL UNION OF GEOLOGICAL SCIENCES

# 2013–2014 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 2013 – 2014, 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

# Contents

03

From the President

06

Governing the Union

07

From the Secretary General

09

From the Treasurer

11

Permanent  
Secretariat

13

2013-2014 Highlights

16

IUGS Bodies

17

IUGS Initiatives

19

Publications

21

Collaborative  
Joint Projects

22

35th International  
Geological Congress

25

RFG 2018

26

36th International  
Geological Congress

27

Expression of Interest  
to Host the 37th IGC

28

Acknowledgement



Prof. Dr. Roland OBERHÄNSLI



## FROM THE PRESIDENT LEAVING DIFFICULT TIMES BEHIND

After my election August 2012 in Brisbane IUGS was struck by several foreseeable, but also unforeseen, events. The transfer of the IUGS Secretariat from USGS to CAGS in Beijing was a tedious operation that only went so smoothly because IUGS could rely on the help of Anne Liinamaa-Dehls. Other problems related to banking were caused due to the change of Treasurer. Again I have to express IUGS thanks to the Chinese colleagues, especially Shuwen Dong, who did their best. A major problem that hit

for their support and swift reaction in electronic voting.

The legacy of the former EC strategic commission was taken up and a new initiative – Resourcing Future Generations – has commenced. Starting as a concept, the project was put into the hands of NASIC – the New Ad hoc Strategic Implementation Committee. Publications in EPISODES and brochures were produced and distributed, a Pardee Symposium at GSA and a special session at EGU were held

**AN IMPORTANT NEW INITIATIVE  
– RESOURCING FUTURE GENERATIONS – HAS BEEN STARTED, INVOLVING ACADEMIA,  
ADMINISTRATION AND INDUSTRY**

IUGS in 2013 was the loss of memory in the EC due to the stepping down of the past President Alberto Riccardi for health reasons. Later in the year the UNESCO office for geology was threatened due to down rating of geosciences. Somewhat later the retirement of our Secretary General Ian Lambert caused another setback to IUGS. But after all this bad news, perhaps as a reaction to the setbacks, many positive things happened and IUGS has moved towards a hopefully more prosperous future. Amongst these was the election of a new Secretary General: I would like to thank our members, the National Committees, at this point

and finally a consultation paper was produced. The initiative involves academia, administration and industry and aims to develop long term strategies for minerals first and energy, water and land use in the long term. I submitted a grant application to ICSU for financial support that was granted early this year to allow us to hold a special workshop on RFG in Windhoek. Last, but not least, our Canadian colleagues transformed their bid for IGC 2020 into an extremely supportive event with respect to this new IUGS initiative. They will organize an interim congress called RFG2018 in which I encourage strong participation from the IUGS community.





A second initiative that IUGS implemented under the auspices of former Secretary General Ian Lambert; vice president Yildirim Dilek and our councillor Yujiro Ogawa San aims towards geohazard and risk reduction themes with a focus on tsunamis. IUGS sponsored a first workshop jointly held with G-Ever in Sendai 2013 with the

led to a proposal from UNESCO to join the two programs, Geoparks and IGCP, under the umbrella of a new International Geopark and Geoscience Program, IGGP. This proposal was endorsed during the UNESCO EC meeting in April 2015 and hopefully will be accepted by the Council. The new statutes for IGGP leave

**THE UNESCO PROGRAMS GEOPARKS AND IGCP ARE NOW JOINED UNDER THE UMBRELLA OF THE NEW INTERNATIONAL GEOPARK AND GEOSCIENCE PROGRAM, IGGP**

outcomes of the Sendai Agreement and a special volume in Episodes. During this year's World Disaster Risk Reduction conference in Sendai, IUGS supported the International Landslide consortium and co-signed the ISDR-ICL Sendai Partnership 2015-2025 on landslides. Alongside this event a new Japanese initiative regarding geoscientific education gave me the chance to stress the fact that society, socio-economists and especially political administrators must be trained in a general understanding of forces, energies and effects of geologic, dynamic processes, their kinetics and timescales.

room for restructuring the bylaws of the scientific IGCP program and these are currently under revision by UNESCO, IGCP and IUGS. A major step forward is that, for both Geoparks and IUCN, experts proposed by IUGS and selected by the two bodies will evaluate geoscience aspects of World Heritage sites.

Reaction regarding recent downgrading of geoscience in UNESCO was immediate and contacts with Patrick McKeever and Mr Han at UNESCO, Wolfgang Eder, one of the former directors, as well as UNESCO ambassadors were established. In part taking up McKeever's suggestion that geosciences under UNESCO should concentrate on Geoparks, I proposed an umbrella structure for UNESCO geosciences overarched by outreach aspects of Geoparks and the IGCP program for scientific networking. My proposal was endorsed by IUGS EC at the meeting in Goa and then submitted to UNESCO. Contacts and discussion continued and finally

A very personal aspect that I defended over the last two years is the fact that modern geosciences are more integrated than the unions that represent them. For this reason I discussed with my colleague Harsh Gupta from IUGG on how the two unions could be brought closer together. IUGS invited IUGG representatives to our EC meetings and

**MODERN GEOSCIENCES ARE MORE INTEGRATIVE THAN THE UNIONS THAT REPRESENT THEM**

IUGS was present at the IUGG EC meeting in Prague this year. A long-term vision is to have the two world congresses as a joint event. For this IUGS EC has already endorsed to call for a joint bid for IGC and I hope IUGG EC will follow the two presidents' suggestions. To realize our vision,

**A LONG-TERM VISION IS TO HAVE THE IUGS AND IUGG WORLD CONGRESSES AS A JOINT EVENT**

requires endurance and the will of many more people in both communities.





As IUGS President I attended two ICSU meetings, one in Paris, 2013 and the General Assembly 2014 in Auckland. ICSU promotes a new initiative under the banner of Future Earth (FE) where geosciences are only marginally involved. This of course was a major theme in the GeoUnion an ad hoc coalition of all sciences relevant to geosphere. Work amongst the GeoUnion members is close and led to an attempt to have a GeoUnion representative within FE. Unfortunately this initiative was not successful. A joint letter offering FE support by the two major solid earth communities, IUGG and IUGS, is so far unanswered and I am

currently working with former IUGS President Ed de Mulder on a document commenting on the FE science plan. On the other hand a GeoUnion representative is on the ICSU board and my IUGS proposal for an ICSU grant was accepted.

Many further meetings with international organizations like GEO/GEOSS, CCOP, GSA, EGU and the African Geological Congress allowed representatives of IUGS, to lobby for our new initiatives and support the efforts to maintain geosciences under 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



Amel BARICH



Prof. Stephen JOHNSTON





Prof. José P. CALVO



## FROM THE SECRETARY GENERAL JUST STARTING IN THE JOB

After submission of nominations by the beginning of March 2014 and further selection by the Nominating Committee, I was elected through an electronic ballot spanning May, June and July. The decision was communicated to me by the President and I accepted on 10 August 2014.

As announced in the call for nominations, the election of a new Secretary General of the Union was due to the resignation of the Secretary General elected in the 34th IGC, Brisbane 2012, our colleague Ian Lambert. I regret that he had to resign. I am taking in advantage this short note to congratulate him and acknowledge for his outstanding contributions during the period he was in the job, in particular promoting and developing the Resourcing Future Generations initiative. Many actions programmed in the IUGS EC meetings in Brisbane (2012), Paris (2013) and Goa (2014) were successfully addressed by Ian Lambert.

commissions, committees, task groups, and IUGS initiatives as well as with past officers of the Union. It took me about two months to become acquainted with the many basic tasks. The IUGS Bureau Meeting was organized in Beijing on 20 October 2014. The meeting was held in the office of IUGS located in the CAGS premise. The visit in China was supplemented by attendance to the China Mining Convention in Tianjin. Although the organization of a session of the IUGS Initiative Resourcing Future Generations (RFG) was well advanced by the beginning of the fall but I was able to provide some assistance and help in the detailed organization of the session. There was a chance to meet Dr. Edmund Nickless, Chair of NASIC and the RFG session, as well IUGS speakers providing talks on the matter. Other aspects to highlight were the meeting with organizers of the 35th IGC present in Tianjin, attendance at the ceremony of signature of

**THE NEW SECRETARY GENERAL STARTED IN THE JOB IN AUGUST 2014—GETTING TO KNOW IUGS BODIES AND APPROACHING THE MEMBERSHIP ARE STIMULATING ACTIVITIES**

During the second part of 2014, my activity as Secretary General was mainly focused on approaching the many and varied IUGS bodies, starting with the IUGS Bureau and Executive Committee members as well as the staff of the IUGS Secretariat in Beijing and the Executive Secretary in Trondheim. Further contact by e-mail was made with representatives from the

MOU with the China Geological Survey, and meeting with the president of a Chinese mining company eventually interested in supporting the RFG initiative.

During the period from August to December 2014, some other activities of the Secretary General related to meetings, assistance and exchanges of proposals with the following





representatives of IUGS and UNESCO:

- Organizers of the 35th IGC in Cape Town, in particular Dr. Greg Botha (SG of the Congress)
- comments on the organization and proposal of celebration of the IUGS Bureau Meeting in Cape Town by the end of May 2014.
- Prof. Jacques Charvet, Chair of the Nominating Committee in order to replace Dr. Edmund Nickless.
- Prof. Paul Bown, SG of the International Commission on Stratigraphy (ICS) – organization of the process for ratification of GSSP of the Lower Toarcian.
- Prof. Stan Finney, President of the ICS – meeting in Madrid and comments on the possible proposal of the Anthropocene as a unit of geological time.
- Dr. Patrick McKeever, representative of IUGS in UNESCO. Officers of UNESCO (M. Patzak

and colleagues).

Preparation of the IGCP Meeting to be held in UNESCO on 25-27 February 2015. Global Geoparks Network meeting on 24 February. During the IUGS Bureau meeting in Beijing, I was charged with preparing proposals for reorganizing the structure of the IUGS bodies. This is in progress.

**RE-ORGANIZATION OF THE IUGS BODIES IS ONE OF THE CHALLENGES TO UPDATE AND IMPROVE ACTIVITIES OF THE UNION**

Most of the recent activities (December 2014 – January 2015) of the Secretary General were focused on the organization of the 68th EC meeting in Vancouver. I much appreciated help from all members of the IUGS Secretariat, Peter Bobrowsky, and our Canadian hosts in Vancouver.



## FROM THE TREASURER



Prof. **DONG Shuwen**

### General Financial Situation of IUGS

During 2013 and 2014, the total income and expenditure of IUGS reached USD 938,518.09 and USD 882,862.24 respectively, contributing to a net income of USD 55,655.85.



**WEN Jun**

### Description of Income

In 2013, a 45% increase of payment of IUGS' membership fees occurred because a number of membership dues for 2012 were paid early. Compared with 2013, the total income in 2014 decreased by USD 106,237.33, mainly due to the following factors:

The table below reflects more detailed information of the income situations in 2013 and 2014.

	Amount (USD)	
	2014	2013
<b>Income</b>		
Membership Fees		
Previous years	59,256.68	84,500.76
Current year	306,337.46	351,434.64
	<b>365,594.14</b>	<b>435,935.40</b>
Contribution from UNESCO		
final payment for last year	16,834.00	10,941.00
1st payment for current year	24,962.00	44,954.00
	<b>41,796.00</b>	<b>55,895.00</b>
Contribution from BGS		<b>21,843.31</b>
Contribution from Episodes(Beijing)		<b>8,000.00</b>
Other Income	<b>8,750.24</b>	<b>704</b>
<b>Total Income</b>	<b>416,140.38</b>	<b>522,377.71</b>

(1) Several members in high financial categories (France, Italy and India, etc.) did not pay their membership fees on time in 2014 but most are likely to pay in the first few months in 2015.

(2) Compared with 2013, there were no additional contributions in 2014 (such as those from British Geological Survey and Episodes in China).

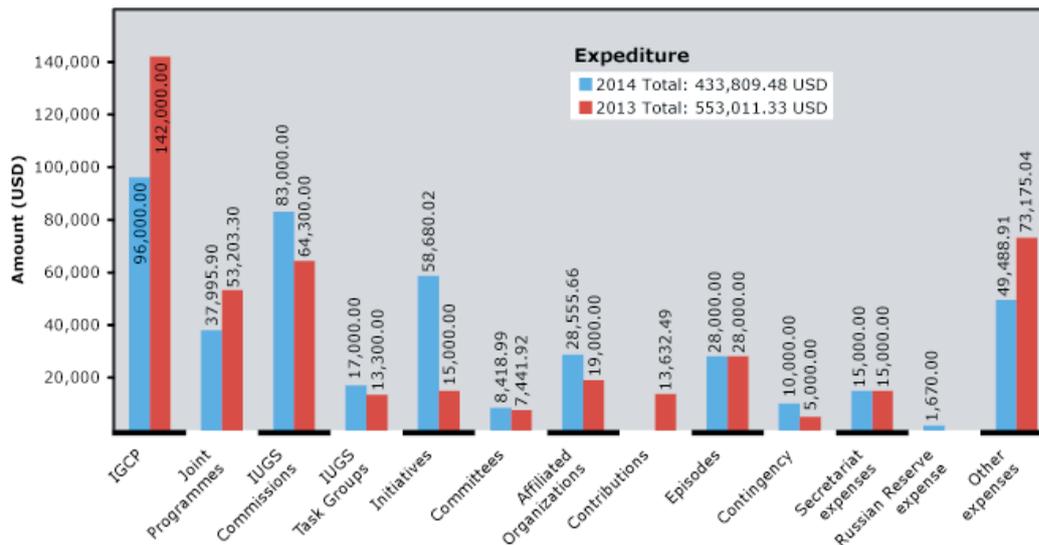


## Description of Expenditure

Actual expenditure in 2013 was USD 103,958.60, lower than in 2012. Payments for IUGS scientific projects accounted for about three quarters of IUGS' total expenditure, including IGCP and Joint Programs, increased from 50.6% in 2012 to 68.3% in 2013, while the expenditure on other activities, such as meetings, decreased relatively.

During the year 2014, expenses continued to decrease as the allocations to some Affiliated Organizations (such as AAWG and CIFEG) and the membership dues to ICSU were not paid for various reasons. The expenditure for IGCP reduced by USD 46,000 as agreed with UNESCO. The new initiative RFG was launched USD 48,630.02 from IUGS.

The graph below reflects more detailed information of the expenditure situations in 2013 and 2014.

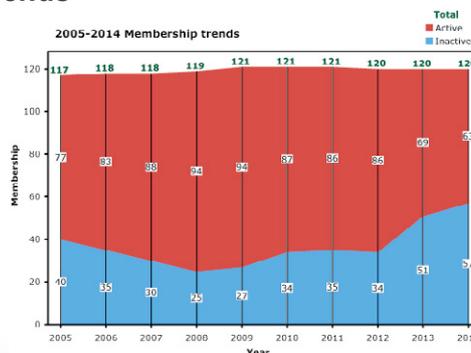


## Issues and Measures

Overspending happened occasionally during these two financial years. Funds for RFG and PC both exceeded their budgets in 2014, which was carefully considered when making the 2015

budget. The standards for reimbursement should be set more clearly and allocated funds need to be supervised well, especially for new projects.

## 2005-2014 Membership Trends



**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 2013 and 2014 the Secretariat consisted of Mr. Li Zhijian (Director until August 2013, Retired), Mr. Wang Wei (Director from September 2013), Ms. Anne Liinamaa-Dehls (part-time Executive Secretary), Mr. Chen Zhu (IT specialist), Ms. Gu Yanfei (full-time Secretary) and Ms. Li Wei (part-time Secretary).

During the two year period, the Secretariat assisted in the organization of several regular administrative meetings, including the 66th EC Meeting (Paris, February 19-22, 2013), the 67th EC Meeting (Goa, February 6-11, 2014), and three IUGS Bureau meetings (Denver, October 27, 2013, Potsdam, August 18-19, 2014, and Beijing, October 20, 2014). After the meeting in Beijing, the Secretariat arranged for the IUGS President to visit to Institute of Geophysical and Geochemical Exploration (IGGE) of the Chinese Academy of Geological Sciences and the UNESCO Category II Center "International Research Center on Global-scale Geochemical Mapping" hosted at the IGGE in Langfang, where a MOU between IUGS and IGGE was signed.

The Secretariat arranged and manned IUGS exhibits at the Geological Society of America annual meeting in 2013 (Denver) and at the China Mining Congress & Expo 2014 in October 2014 (Tianjin). Representatives from the 35th IGC joined the Secretariat on both occasions. A new brochure highlighting the current activities was produced in

time for the GSA event. In addition, promotional items to be given out at exhibits were produced by the IUGS Secretariat: T-shirts (250 pieces), polo shirts (250 pieces), hats (500 pieces) and mouse mats (2000 pieces). Later in 2014 the Secretariat designed and produced 6000 badges for promotional purpose and 30 badges to be presented to "people of merit" for IUGS during award ceremonies.

At the China Mining meeting, the Secretariat continued to promote the IUGS Initiative Resourcing Future Generations. In pursuit of this, promotional material focused on the theme of resources and the Secretariat assisted in organizing a session on the research basis for the new IUGS initiative Resourcing Future Generations (RFG) under the title "Ensuring the Supply of Raw Materials for the Next Generation".

On Council matters the Secretariat sent out ratifications on the following five items to all the IUGS Adhering Organizations in June and August 2013: (1) Jacques Charvet as Chair of the Nominating Committee; (2) International Association for Geoethics (IAGETH) as an IUGS Affiliated Organization; (3) International Association for Promoting Geoethics (IAPG) as an IUGS Affiliated Organization; (4) Dr. Alison Ord as Chairman of the IUGS Commission on Tectonics (TecTask); (5) TNO- Built Environment and Geosciences National Geological Survey as the Adhering Organization for The Netherlands. In 2014, the Secretariat administered the voting for the new IUGS Secretary General (José P. Calvo) and new member of IUGS Nominating Committee (Niichi Nichiwaki).



**Ms. Anne LIINAMAA-DEHLS**  
Executive Secretary



**Ms. LI Wei**  
Secretary

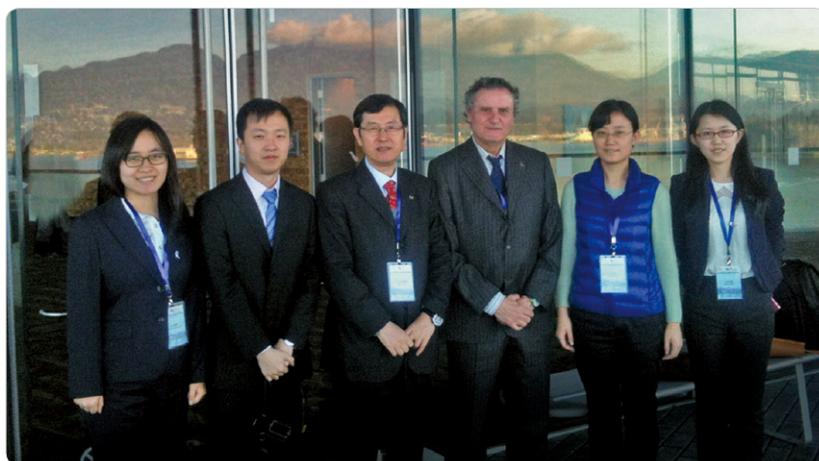


**Mr. CHEN Zhu**  
IT Specialist



**Ms. GU Yanfei**  
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.





## 2013-2014 HIGHLIGHTS

### **JANUARY 2013**

The IUGS Ad-hoc Review Committee (ARC) presented their report on the two joint partnership programs between IUGS and UNESCO-International Geoscience Program (IGCP) and Geological Applications of Remote Sensing (GARS) Program. The reviews resulted in the termination of IUGS involvement in GARS and discussion of updating IGCP.

### **FEBRUARY 2013**

A commemoration ceremony was held in Burlington House at the Geological Society of London to commemorate Dr. Wissam Al-Hashimi (IUGS Vice-President, 1996-2002) who was kidnapped and brutally killed by terrorists in August 2005, in Baghdad, Iraq.

IUGS established a New Activities Strategic Implementation Committee (NASIC), comprised of eminent geoscientists from around world: E. Nickless (Chair NASIC, Exec. Sec. GSL), I. Lambert (IUGS), J. Ludden (BGS), N. Williams (formerly CEO of Geoscience Australia), R. Oberhänsli (IUGS), M. Godoy (Vale), P. Leahy (AGI) and Wang A.-J. (CAGS). The task of the committee was to establish an initiative aimed at examining the issue of the long term and rapidly increasing societal demand for natural resources: what should be done in the next 10-20 years to help ensure continued supply of essential resources?

### **MARCH 2013**

Meng Xianlai, Executive VP of the Geological Society of China, informed the IUGS on March 1, 2013 of China's wish to increase its membership category from seven (7) to eight (8). China expressed its wish to become more actively

involved in IUGS activities and making greater contribution to IUGS and to the broader global geosciences community.

IUGS joined Social Media: LinkedIn, Twitter and Facebook.

### **JUNE 2013**

IUGS Council ratified the applications of the International Association for Geoethics (IAGETH) and the International Association for Promoting Geoethics (IAPG) to become IUGS Affiliated Organizations.

### **JULY 2013**

The IUGS President wrote to the President of Canadian Federation of Earth Sciences accepting Canada's offer to host the first IUGS inter-IGC Conference event in Vancouver in 2018. This will be more restricted in scope than a regular IGC and will involve other GeoUnions. The focus will be on "Resourcing Future Generations".

The Proceedings Report of the 34th IGC (Brisbane) was published. Ian Lambert, 34th IGC Secretary, said that the completion of the report marked the end of some 9 years of planning, organisation and management activities. The proceedings were posted on the websites of the 34th IGC ([www.34igc.org](http://www.34igc.org)) and IUGS ([www.iugs.org](http://www.iugs.org)) in early July.

The international geological community was urged by the IUGS President to submit letters of support for UNESCO's Earth Science Section and IGCP as Earth Sciences at UNESCO had been disastrously downgraded to priority C in the budget set out by the 191th UNESCO Executive Board meeting in July. After several approaches from IUGS, and strong support from other bodies, the



situation seemed to improve slightly.

### **SEPTEMBER 2013**

IUGS Council ratified a revised application from Earth Science Matters (ESM) for affiliated status with IUGS, and Professor Ben Mapani was approved as the new Chair for IUGS' Commission – Geoscience for Environmental Management (GEM).

Shell donated \$10,000 to the IUGS International Commission on Stratigraphy (ICS). In addition, ICS's proposal to the National Science Foundation (NSF) resulted in a grant of \$75,000. ISC Chairman Stan Finney was congratulated for his continued work in establishing Global Geostandards.

### **OCTOBER 2013**

The GSA Annual Assembly 2013 (Denver): Ian Lambert, IUGS Secretary General convened the GSA Pardee Keynote Symposium on "Resourcing Future Generations". The IUGS Bureau was invited by the Chair of the Stratigraphy Commission to attend the inauguration ceremony of the GSSP defining the Turonian Stage in the Pueblo State Park, Colorado and to meet GSA President Suzanne Kay.

OneGeology consortium meeting was held in Paris on 21-22nd October. The consortium members adopted new objectives and governance structure, and appointed a new board. Marko Komac, IUGS Vice President was appointed managing director of OneGeology.

The 2nd G-EVER International Symposium and the 1st IUGS & SCJ International Workshop on Natural Hazards were planned under IUGS, SCJ (Science Council of Japan) and G-EVER (of Geological Survey of Japan) and was

held successfully on 19-20 October. Field trips were conducted in the tsunami disaster areas associated with the Tohoku-oki Earthquake of March 2011.

### **NOVEMBER 2013**

During the meeting of the eight Geounions of ICSU, held in Antalya, Turkey, participants raised concerns about a lack of presence of earth sciences in ICSU's Future Earth programme. IUGS's suggestion for submitting a joint GeoUnion grant proposal to ICSU on Resourcing Future Generations theme received support.

The IUGS President received UNESCO's proposal to place Geoparks under the umbrella of IGCP. In response, IUGS suggested a two-pillar structure to include a scientific program similar to IGCP running in parallel with the outreach program represented by Geoparks.

### **JANUARY 2014**

The entire IUGS Executive, Secretariat and international geological community sadly received the resignation of IUGS Secretary General, Ian Lambert. Vice President Yildirim Dilek was appointed to serve as interim Secretary General.

The National Centre for Antarctic and Ocean Research (NCAOR) graciously hosted the 67th Executive Committee Meeting, on behalf of the Indian National Academy of Sciences and the Indian National Committee for IUGS. The IUGS Bureau stayed in Delhi to give talks at the Centre of Excellence at the Indian Geological Survey (Faridabad) and Delhi University, as well as to visit the venue for the 36th International Geological Congress to be held in 2020.



### **July 2014**

The IUGS seat in the Global Geoparks Network Bureau was filled by Marko Komac (replacing Wesley Hill). IUGS continues its responsibility for the geological portion of the Geopark assessments and expert evaluation of the geopark application process. IUGS would have a representative in the Geoparks Council undertaking a role similar to that in the IGCP Scientific Council.

### **August 2014**

NASIC presented “The White Paper on Mineral Resources and Future Supply” to the IUGS Executive. The IUGS Bureau forwarded this consultation paper to the international community, and called for broad-level discussion of its contents.

Wesley Hill and Sampat Kumar Tandon ended their terms as IUGS Councillors. Councillors Amel Barich and Stephen Johnston started their 4-year term.

IUGS Council elected Prof. José P. Calvo as the new IUGS Secretary General.

### **September 2014**

IUGS Councilor, Yujiro Ogawa, along with former IUGS Secretary General Peter Bobrowsky led the IUGS sponsored session on “Pan-Pacific Subduction Zone Hazards: Tectonics and Gravitational Effects” at The Annual Meeting of the Geological Society of America in Vancouver.

### **October 2014**

Led by Roland Oberhänsli, NASIC presented a joint grant proposal to ICSU on Resourcing Future Generations, along with other ICSU GeoUnions, which was later accepted.

For the first time IUGS officials attended the China Mining conference in Tianjin. The event attracted over 8,000 registered delegates. IUGS’ high-level participation provided a good input to the Resourcing Future Generations initiative. IUGS successfully organized the RFG session. In addition, IUGS met with officials from the Ministry of Land and Resources and signed a MOU on Global Geochemical Mapping Cooperation with the China Geological Survey.





## 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](http://www.iugs.org)):

#### **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**

One of the major challenges facing global society is continuity of raw material supply over the coming decades. In the middle of the 20th century, some countries experienced 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. That is the why IUGS has established a New Activities Strategic Implementation Committee (NASIC) to oversee the implementation of a new initiative, Resourcing Future Generations. The vision is that IUGS will play a catalytic and coordinating role in RFG, and that appropriate groups amongst its many adhering organizations and interested affiliate members such as the Task Group on Global Geochemical Baselines and the International Association of Mathematical Geosciences will be involved to contribute relevant experience and expertise.

RFG will harness IUGS strengths and not cut across the many short-to-medium term exploration activities of industry. It will also provide a focus for much of the currently rather ad hoc minor requests to IUGS for funding.

RFG was inaugurated at the 66th Executive Committee Meeting (Paris, February 2013) since when a small group has been seeking to promote the initiative. We have organised Town Hall events at annual meetings of the Geological Society of America and of the

**IUGS WILL PLAY AN ESSENTIAL  
COORDINATING PART AMONGST GROUPS  
FROM MEMBER  
COUNTRIES, AFFILIATED  
ORGANIZATIONS AND  
IUGS BODIES**

American Geophysical Union to assess interest within the wider scientific community. All have said that “something should be done.” So during 2014 we organised a symposium of twelve presentations at the China Mining Meeting in Tianjin, and published a White Paper (downloadable in pdf and swf formats) outlining issues of supply and demand over the coming two decades. Additional background and an invitation to comment can be found here.

In the coming year emphasis will be on promoting the initiative more widely. Plans include holding





a workshop in Windhoek, Namibia to explore four themes, possibly using Namibia as a case study:

- i. Comprehensive evaluation and quantification of 21st century supply and demand;
- ii. Enhanced understanding of subsurface as it relates to mineral (energy and groundwater) resources;
- iii. Evaluation of where additional natural resources are likely to be found;
- iv. Building additional capacity to facilitate responsible development in less developed nations.

Outputs from the workshop will inform a major session on Resourcing Future Generations during the 35th IGC at Cape Town, South Africa from 27 August to 4 September 2016.

### **INITIATIVE ON FORENSIC GEOLOGY**

Although forensic geology has its roots in the later half of the 19th Century, over the last ten years interest in the subject has developed significantly. The IUGS Initiative on Forensic Geology was officially launched in February

2011 with the objective of developing Forensic Geology internationally and promoting its application through capacity building, technology transfer and outreach.

During 2014 significant progress has been made in developing “a guide to Forensic Geology”, in organising training events and in collaborating with many groups including the Centre for Australian Soil Forensics as well as participating in the International Association Forensic Sciences Meeting in Seoul, Korea. Training courses have been run in the UK, Australia and USA, material developed for the first Italian course on Forensic Geology, the first Forensic Geology newsletter was published, the Geoforensic International Network expanded and is now represented in more than 32 countries (see figure 8.2 of annual report to the IUGS EC), a working draft of “a guide to Forensic Geology” completed and several scientific papers published in peer reviewed journals. Much of the work is for the good of society and concerns provision of confidential advice and operational support to police, security and law enforcement agencies.





**Brian Marker**  
**Chair of IUGS**  
**Publications Committee**



## **PUBLICATIONS**

2013-2014 saw the rejuvenation of the IUGS Publications Committee. The first Committee meeting for some years took place in Paris, France, in January 2013, with four existing and three new members, including a new chairman.

### **EPISODES**

The priority was continuing delivery of the IUGS journal Episodes to high quality under the direction of a newly appointed Editor. A backlog of papers already accepted despite poor use of English had to be cleared, involving considerable Editorial work. The Episodes Editorial Board had not been used for several years. Members were contacted to determine whether they still wished to serve. Four continued, 7 new members were secured and more are being sought.

**THE EPISODES EDITORIAL BOARD WAS  
 REJUVENATED AND THE  
 IMPACT FACTOR OF THE  
 JOURNAL RECOVERED IN 2014**

A low impact factor for Episodes in 2012-2013 caused concern. That was primarily due to late publication of the two December issues causing omission from annual impact assessments. The impact factor recovered in 2014. Action was taken to deal with the persistent problem of publication issues of Episodes later than the cover month eliminated that problem by late 2014.

Instructions to participants in the Episodes publication process were out-of-date. Updated guidance was prepared for: authors; members of the Editorial Board; guest Editors of special issues; and potential advertisers.

“Metrics” for assessment of the performance of Episodes were incomplete. More systematic monitoring of processing, publication and impact factor trends is now in place. There was no existing statement of IUGS publications policy and ethics. A draft is now in preparation.

The Committee also considered modernization of Episodes at its meeting in Goa, India, in February 2014. The resulting white paper, considering the potential for and costs of online-first and online-only publication, was submitted to the IUGS Secretariat prior to the IUGS Bureau meeting in October 2014. The Publications Committee met in Turin, Italy, in September 2014 to review progress, discuss options and identify next steps. In November the Chairman of the Publications Committee met the IUGS President and Secretary General in Madrid, Spain, to discuss the way forward. It was agreed that an essential precursor to change should be DOI registration for all papers in Episodes.

### **IUGS WEBSITE**

The IUGS website was managed effectively during 2013-2014 but there had been a persistent difficulty in securing some updates. The flow has been improved but more needs to be done. The Committee felt that better coordination of the flow of news through various outlets (Episodes, the website, E-Bulletin and social





media) would be desirable and was pleased that the Executive is now developing a communications strategy.

**BETTER COORDINATION OF NEWS  
THROUGH VARIOUS OUTLETS  
IS BEING ACHIEVED BY DEVELOPING A  
NEW COMMUNICATIONS STRATEGY**

### **IUGS SPONSORED BOOKS**

The Memorandum of Understanding under which the Geological Society (London) has first refusal of books arising from IUGS activities was working well, was adequately monitored and reported. The PC Chairman met staff of the publications team three times in each of 2013 and 2014. Since inception of the MOU, 31 titles had been published; 7 were in production; 6 had been accepted; and 1 proposal was at review.

Three new titles were published during the period of this report. These were:

D.A.T. Harper & T. Servais (Editors) 2014 Early Palaeozoic Biogeography and Palaeogeography. Geological Society Memoir No. 38 Geological Society (London) 490pp ISBN978-1-86239-373-8

F. L. Chiocci & A. R. Chivas (Editors) 2014 Continental Shelves of the World: Their Evolution During the Last Glacio-Eustatic Cycle Geological Society Memoir No. 41 Geological Society (London) 343pp ISBN978-1-86239-686-9

P. S. Garofalo and J. R. Ridley (Editors) 2014 Gold-Transporting Hydrothermal Fluids in the Earth's Crust. Geological Society Special Publication No. 402 Geological Society (London) 263pp ISBN978-1-86239-657-9.

All are available electronically to subscribers to the Society's Lyell Collection."





## 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. The IGCP has evolved in its 41 years of existence, during which its objectives and structure have changed several times.

An ARC review of IGCP in January 2013 reiterated that IUGS should work to ensure earth sciences programmes provided that IGCP is a unique platform for the earth sciences community. Some reforms were suggested by the ARC in view of diminishing funds. These included establishing an interdisciplinary and multidisciplinary approach; streamlining the annual report; establishing metric assessments of outcomes; and reduction to three-year grant periods with performance and delivery evaluation. Additionally, the ARC had suggested project legacies, effective dissemination of project results, inter-project symbiotic collaboration, and a call for proposals on “hot-topics”.

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”.

### **INTERNATIONAL LITHOSPHERE PROGRAMME (ILP)**

In 2014, the ILP Business Meeting was held at EGU 2014 in Vienna. The ILP Task forces (TF) and regional committees held successful meetings & workshops and enlarged their networks (TF V: LAB workshop in Hainburg/Donau, Austria; TF VI: 2014: 9th annual workshop in Jeddah, Saudi Arabia was cancelled; planning of the 10th annual workshop in Japan, October 2015 was undertaken; TF IX: ZIP (Zooming in between plates ITN project): FIELD TRIP Alps; TF X: A position paper for the SP1 Task Force of the EERA Joint Programme on shale gas; Coordinating Committee TOPO-EUROPE: meeting Barcelona, 17-20 September 2014). ILP had significant input and visibility in several large meetings, such as EGU, AGU, GSA, etc. A number of publications had been published by the ILP Task Forces.

### **GEOLOGICAL APPLICATIONS OF REMOTE SENSING (GARS)**

During the meeting held in Goa, the IUGS Executive was reminded of its previous decision that unallocated GARS money for 2012 should be allocated to a workshop organized by Africa Array.

### **ISOTOPE GEOLOGY AND GEOCHRONOLOGY (TGIG)**



# 35<sup>TH</sup> INTERNATIONAL GEOLOGICAL CONGRESS

27 AUGUST - 4 SEPTEMBER 2016 | CAPE TOWN, SOUTH AFRICA



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

**Co-Presidents: Prof. Richard Viljoen  
- Jeannette E. McGill**

**Secretary General: Greg Botha  
Scientific Chair: Laurence Robb  
Secretariat: Danie Barnardo  
- Juanita van Wyk**

**VENUE ADDRESS:**

**Cape Town International Convention Centre (CTICC)**  
Convention Square, 1 Lower Long Street  
Cape Town, 8001 South Africa

The core topics for the Congress are Geoscience for Society, Fundamental Geoscience and Geoscience in the Economy. A total of 49 themes covering all disciplines in the geosciences will form the basis of the technical programme.

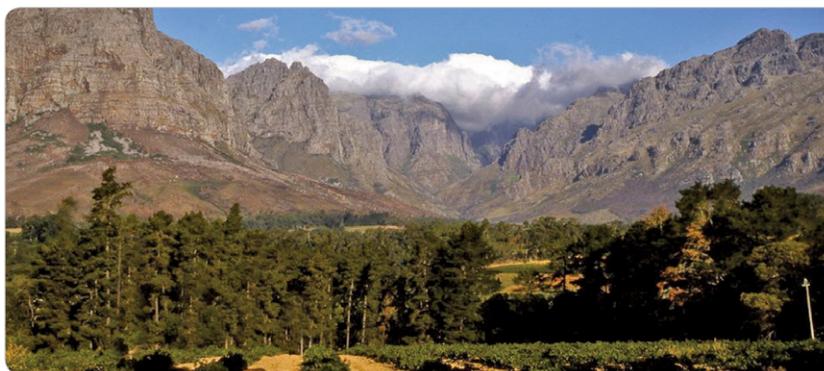
The 35th IGC will be marketed and organised as an African rather than a South African event. The organisers therefore plan to involve other African countries as much as possible, mainly by sponsoring the participation of less privileged African students and by field excursions to the rest of Africa.





**Important dates - see periodic update on the Congress webpage**

<b>31 May 2015</b>	Symposia proposals closed
<b>1 July 2015</b>	Opening of abstract submissions, and applications for the GeoHost Support Programme
<b>1 September 2015</b>	'Super Early-bird' registration opens
<b>1 October 2015</b>	Third Circular released.
<b>2 November 2015</b>	'Early-bird' registration opens
<b>31 December 2015</b>	Workshop and Short Course proposals close
<b>31 January 2016</b>	Abstract submissions close.
<b>31 January 2016</b>	GeoHost support scheme applications close
<b>1 March 2016</b>	Fourth Circular released
<b>31 March 2016</b>	Formal notifications to authors on their abstracts
<b>7 April 2016</b>	Successful GeoHost applicants to be notified
<b>22 April 2016</b>	Volunteer applications close
<b>1 May 2016</b>	Accommodation bookings close
<b>9 May 2016</b>	Successful volunteers notified
<b>31 May 2016</b>	Presenters' registration deadline and Field Trip bookings close
<b>1 June 2016</b>	Standard registrations open and 'Early-bird' registrations close
<b>1 July 2016</b>	Fifth Circular released — preliminary programme
<b>27 August 2016</b>	On-site registration





## Overall structure of the 35th International Geological Congress

<b>Precongress Field Trips:</b>	Thursday 18 to Saturday 27 August 2016
<b>Workshops, Short Courses:</b>	Saturday 27 and Sunday 28 August 2016
<b>Registration opens, exhibition setup, some business meetings:</b>	Sunday 28 August 2016
<b>35th IGC welcome reception:</b>	Sunday Evening, 28 August 2016
<b>Opening ceremony and first symposium:</b>	Monday 29 August 2016
<b>Scientific programme:</b>	Monday 29 August to Friday 2 September 2016
<b>Business meetings:</b>	Evenings of Monday 29 August to Thursday 1 September 2016
<b>Congress dinner:</b>	Thursday 1 September 2016
<b>Closing ceremony and last symposium:</b>	Friday 2 September 2016
<b>Post-congress field trips:</b>	Saturday 3 to Tuesday 13 September 2016

## FIELD TRIPS

**South Africa:** 35 planned field trips; **Angola:** 1 planned field trip; **Botswana:** 2 planned field trips; **Ghana:** 1 planned field trip; **Lesotho:** 1 planned field trip; **Mali:** 1 planned field trip; **Namibia:** 6 planned field trips; **Tanzania:** 3 planned field trips; **Zambia:** 2 planned field trips.





**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.





## 36<sup>th</sup> INTERNATIONAL GEOLOGICAL CONGRESS 2-8 MARCH 2020, DELHI, INDIA

The International Geological Congress will be organized again in India after 56 years. The event will be jointly hosted by the Ministry of Mines and the Ministry of Earth Sciences, Government of India with active support from the Indian National Science Academy (INSA) and assistance from Science Academies of neighboring co-host countries viz. Bangladesh, Nepal, Pakistan and Sri Lanka.

coalesced from five cratonic blocks surrounded by mobile belts offers insights into the primordial crust of the Earth. The breakup of Gondwana and the 70 million year journey to the north is manifested by 500,000 sq. km of flood basalt in the central part of the country. The culmination of this journey resulted in the formation of the mighty Himalayas. The list of geological wonders of this sub continent are many....

**As the next host nation, India beckons Geoscientists to be part of this  
Mega Event that is being driven by a motto "Science for all and not for profit".**

**The Congress theme is GEOSCIENCE: THE BASIC SCIENCE FOR SUSTAINABLE FUTURE**

The Indian subcontinent has a rich cultural heritage as well as an array of fascinating geology including everything - from Meso-Archean crustal nuclei to present day volcanism. The region

Get associated with 36th IGC! Be part of it! Explore this incredible land and its unique geology. Experience its beauty and heritage.



# EXPRESSION OF INTEREST TO HOST THE 37TH IGC



## 35<sup>TH</sup> INTERNATIONAL GEOLOGICAL CONGRESS

27 AUGUST - 4 SEPTEMBER 2016 | CAPE TOWN, SOUTH AFRICA

### INTERNATIONAL GEOLOGICAL CONGRESS COMMITTEE

c/o Secretariat, 35<sup>th</sup> International Geological Congress Foundation  
Private Bag X112  
Pretoria, 0001  
South Africa

30 June 2015

Contact: [gabotha@geoscience.org.za](mailto:gabotha@geoscience.org.za)

To: Chairpersons, National Committees of the IUGS Member countries

### Call for Expression of Interest to host 37<sup>th</sup> International Geological Congress, 2024

Dear Colleague

The current IGCC and IUGS are looking forward to receiving Expressions of Interest to host the 37<sup>th</sup> IGC in 2024 from IUGS Member countries. Please submit your responses, detailing the venue and proposed dates, to the IGCC Secretariat by 30 November 2015.

You are encouraged to consult with the past and current IGCC committees that have compiled the bid guideline document attached here. The proceedings of previous IGC events are valuable resources for countries interested in submitting a bid (<http://iugs.org/index.php?page=prev-igc>).

Due to organizational reasons the final bid documents should be sent to the presidents of IGCC and IUGS not later than 30 April 2016. Earlier submissions will be highly appreciated!

We look forward to a high level of interest in hosting 37<sup>th</sup> IGC in 2024.

Yours,

Richard Viljoen  
IGCC Co-Chair  
Co-President, 35<sup>th</sup> IGC

Roland Oberhänsli  
IGCC Co-Chair  
IUGS President

International Geological Congress Committee  
Richard Viljoen (Co-chair), Roland Oberhänsli (Co-chair), Arne Bjørlykke, Ian Lambert, José P. Calvo, Neil Williams,  
Shuwen Dong, Greg Botha (Secretary)



# ACKNOWLEDGEMENT

The invaluable contributions of the following persons are acknowledged with deep appreciation and gratitude:

Prof. José P. Calvo, the IUGS Secretary-General, for his great efforts in and contributions to compiling the IUGS 2013-2014 Report.

Prof. Brian Marker, Chair of the IUGS Publications Committee, for his careful and conscientious review and modification of the Report.

Prof. Pedro Castañeiras (Dept. of Petrology & Geochemistry, UCM) for his technical advice in designing the Report.