

REPORT OF THE IUGS SECRETARY GENERAL REGARDING THE ADMINISTRATION OF THE INTERNATIONAL UNION OF GEOLOGICAL SCIENCES FOR THE PERIOD 2016 (September) TO 2020 (March)

EXECUTIVE SUMMARY

The International Union of Geological Sciences is one of the largest scientific unions under the umbrella of the International Science Council. It currently supports 122 Adhering Organizations, of which 65 are Active members, and 57 Affiliated Organizations. Since the 4th Joint IUGS-IGC Council held in Cape Town, 3 additional organizations were approved for Affiliation. The IUGS Executive Committee met once per year since the 35th IGC in 2016. Additionally, the Bureau will have met 12 times by the time of the 5th Joint IUGS-IGC Council Meeting at the 36th IGC in Delhi. Four of those Bureau Meetings were held on the day preceding Annual Meeting of the EC. Four official committees were active during the past term: Nominating Committee, Publications Committee, Finance Committee, and the New Activities Strategic Implementation Committee, and several Ad hoc Review Committees. Publications and other communication options increased markedly since 2016. Eleven IUGS related new books (published by the Geological Society of London), 46 E-Bulletins, 3 Annual Reports, 4 volumes of Episodes and a new Union brochure were published. The SCI Impact factor for *Episodes* declined from 3.263 in 2015 to 1.708 in 2018. After a disruption in 2016, the IUGS website was rejuvenated and updated; a new design will appear soon. Seven Commissions were very active; they are ICS, INHIGEO, TECTASK, CGI, COGE, ICG, and CGGB. Three Task Groups were active (TGG, TGIG, and TG-GGP); a fourth, the Task Group on Global Geoscience Professionalism (TG-GGP), was deactivated by the EC effective with the end of the current term at the 36th IGC. Both current initiatives (IFG and RFG) maintained high profiles. The EC endorsed a new Big Science Program with the DDE (Digital Deep Time Earth) project as its first project. The International Science Council (ISC) was created by the merger of the International Council for Science (ICSU) and the International Social Science Council (ISSC). IUGS played an important role in the merger and the positioning of geological sciences in the administrative structure. The GeoUnion consortium still comprises 9 Unions and informal cooperation amongst the group members is on the increase. The relationship of IUGS with UNESCO was strengthened with participation of IUGS in aspects of the UNESCO Global Geoparks Program and by its continued major financial support of, and participation in, IGCP. Other joint initiatives included the International Lithosphere Program (ILP) with IUGG and the Task Group on Isotopes and Geochronology (TGIG) with IUPAC. The IUGS is the main scientific sponsor of the 36th International Geological Congress in Delhi, India, in 2020.

For detailed information about the International Union of Geological Sciences including membership, science activities, administration and other topics please visit the website: www.iugs.org

EXECUTIVE COMMITTEE

Following elections at the Council Meeting in September 2016, Cape Town, South

Africa, the following individuals served as IUGS Executive Committee officers:

President – Qiuming Cheng (Canada and China)
Past President – Roland Oberhänsli (Germany))
Secretary General – Stanley Finney (United States)
Treasurer – Hiroshi Kitazato (Japan)
Vice President – Kristine Asch (Germany)
Vice President – William Cavazza (Italy)
Councillor (August 2014 – August 2018) – Stephen Johnston (Canada)
Councillor (August 2014 – August 2018) – Amel Barich (Morocco)
Councillor (September 2016 – March 2020) – Edmund Nickless (United Kingdom)
Councillor (September 2016 – March 2020) – Benjamin Mapani (Zambia)
Councillor (September 2018 – August 2022) – Silvia Peppoloni (Italy)
Councillor (September 2018 – August 2022) – Claudia Mora (United States)

One Councillor elected in Cape Town for the term of 2018-2022 withdrew from the position at the beginning of the term. A bye-election completed in January 2019 resulted in the election of Claudia Mora to fill the position.

Following the election of the new Executive Committee in Cape Town, administrative meetings were held in 2017, 2018, and 2019 and a fourth is scheduled for January 2020.

71st EC meeting (15-18 February 2017) Paris, France
72nd EC meeting (23-26 January 2018) Potsdam, Germany
73rd EC meeting (27 February - 2 March 2019) Beijing, China
74th EC meeting (15-18 January 2020) Busan, S. Korea
75th EC meeting (1 March 2020) Delhi, India

The Executive Committee meetings were generally “open” to observers. Representatives from various National Committees, local “host” government organizations, sister ‘GeoUnions’, IGC Committee members, UNESCO, and many others were invited to and were often present at these meetings. Decisions and discussions regarding budgets and other sensitive Union issues were held in-camera for elected EC members and representatives of the Permanent Secretariat.

The Executive Committee of IUGS met annually at the expense of the Union, except for the positions within the Bureau whose employers or sponsoring agencies covered travel costs. These meeting costs are often eased by the National Committees who host the EC meetings and often arrange for local agencies and authorities to cover the costs of accommodation, local transport and meals.

BUREAU

The day-to-day management of the Union was handled by the IUGS Bureau (President, Treasurer and Secretary General) who are also part of the EC, as defined in the current Statutes and Bylaws. To this end, the members of the Bureau met outside of the Annual Meeting during their tenure to adjudicate over

pressing matters. The Bureau also met for one day before each of the EC meetings. In May 2019, it met in conjunction with a meeting of the IGCC in New Delhi, India. Bureau meetings were held at the GSA Annual Meeting in Seattle in 2017 and at the RFG2018 Conference in Vancouver in June 2018. In total, eleven Bureau meetings were held from November 2016 to October 2019. Depending on the matters to be addressed and location of the meeting, one or both Vice Presidents attended.

The following Bureau meetings were held during this term of office:

- 11-12 November 2016 (Beijing, China)
- 14 February 2017 (Paris, France)
- 6-7 June 2017 (Long Beach, USA)
- 24-25 October 2017 (Seattle, USA)
- 22 January 2018 (Potsdam, Germany)
- 18 May 2018 (New Delhi, India)
- 20-21 June 2018 (Vancouver, Canada)
- 12-14 November 2018 (Sendai, Japan)
- 25 February 2019 (Beijing, China)
- 18 May 2019 (New Delhi, India)
- 20-21 October 2019 (St. Petersburg, Russia)

PERMANENT SECRETARIAT

The IUGS Secretariat is hosted within the premises of the Chinese Academy of Geological Sciences (CAGS, No. 26, Baiwanzhuang Road, Beijing 100037, China) under the Ministry of Natural Resources of the People's Republic of China. Since the relocation of the Secretariat to Beijing in December 2012, the Chinese government has been providing tremendous and stable financial and logistical support for the smooth operation of the Secretariat. The China Geological Survey (CGS) strongly supports the renewal of the MoU and the continued operation of the IUGS Secretariat in China. The current Permanent Secretariat is led by Ma Yongzheng (Director). Staff members include: Li Wei, Situ Yu, Gu Yanfei, Xu Yaqi, Mu Langfeng and Yang Chen.

MEMBERSHIP

Membership in the Union is through an Adhering Organization. These are typically national/regional organizations such as geological surveys, national academies of sciences and geological societies.

The Union recognizes 122 Adhering Organizations; thus the IUGS supports the largest number of member countries of all Geo-Unions. IUGS recognizes Active members as those Adhering Organizations with dues paid in full in contrast to Inactive members with dues outstanding for three or more years. The number of Active members has declined over eight years from 80 in 2012 to 73 in 2016 and to 65 now. This is of concern to the EC and is an agenda item for the IUGS-IGC Council Meeting. On the other hand, since 2016, The IUGS EC has approved Kyrgyzstan, Myanmar, and Nepal for provisional membership. They will be

presented to the Council to approve permanent adhering membership at the 36th IGC.

In 2019, the status of Philippines changed from Inactive to Active and that of Portugal and Argentina from Pending to Active. The status of Azerbaijan, Belgium, Norway, and Sri Lanka changed from Active to Pending (dues unpaid for two years), and changing from Pending to Inactive (unpaid dues for three years) status are Iceland, Iraq, Latvia, Peru, Tajikistan, and Uruguay.

AFFILIATED ORGANIZATIONS

An Affiliated Organization is an international, non-governmental, scientific, autonomous organization that has obtained affiliation within the Union for the representation of scientific interests and, through the Union in the International Science Council, for collaboration in arranging scientific meetings, and for planning and undertaking geosciences activities. The IUGS is in the enviable position to be affiliated with a significant number of specialized organizations, societies and groups that serve a large number of Earth scientists and/or focus on important niches and subjects within the discipline. Such organizations apply formally to the Union for official recognition as Affiliated Organizations. As with Adhering Organizations, the status of Affiliated Organizations requires the official ratification by the Council.

The Executive Committee has approved the following new IUGS Affiliated Organization since 2016, which will be ratified by the IUGS-IGC Council at the 36th International Geological Congress in March 2020:

Geology for Global Development (GfGD)

The Union has received the application documents from the following international organizations in 2019, which will be evaluated during the 74th IUGS Executive Committee Meeting in January 2020. If approved by the IUGS Executive Committee, the following applications will be ratified by the IUGS-IGC Council at the 36th International Geological Congress in March 2020:

International Research Center on Karst (IRCK)
Society for Environmental Geochemistry and Health (SEGH)

The Affiliated Organization declared as “defunct” this term is:

Italian Federation of Earth Sciences (FIST)

As a sequence, the total number of Affiliated Organizations now stands at 54

COMMITTEES

The following official IUGS Committees were active in the past 3+ years:

Nominating Committee (NC)
Finances Committee (FC)
Publications Committee (PC)
Ad hoc Review Committees (ARC) and
New Activities Strategic Implementation Committee (NASIC).

The Nominating Committee (NC) reports directly to Council and not the Executive Committee. During this term, the Nominating Committee was chaired by Roland Oberhänsli (Germany). The remaining members of the NC included Ruth Allington (UK), Hernani Chaves (Brazil), Dong Shuwen (China), Marko Komac (Slovenia), Reed Mapeo (Botswana) Suzanne O'Reilly (Australia). As mandated by the current Statutes and Bylaws, this committee requested nominations from all eligible bodies and organizations for the positions of IUGS EC members to be appointed in 2020. The Committee evaluated all nominations and tabled recommendations to the Council for their final decision. In addition, with the unexpected retirement of a Councillor at the beginning of the 2018-2022 term, the NC ran a search and evaluation procedure via electronic correspondence. Close cooperation of the NC with the Secretary General and the support of the Council Members allowed for a rapid and smooth election of councillor Claudia Mora. A copy of the full report from the Nominating Committee was posted on the website and was available from the Secretariat

As ratified by the IUGS Executive Committee by e-mail ballot subsequent to its meeting in Potsdam (23-26 January 2018), the IUGS Finance Committee (FC) was re-established. Its members are: William Cavazza (IUGS Vice-President), Andrew J Fleet (Dorset County Museum), John W Hess (Geological Society of America Foundation), Edmund F P Nickless (IUGS Councillor). Primary tasks of the FC are: (i) identifying financial opportunities for IUGS; (ii) analysing the financial performance of IUGS bodies (in arrangement with ad-hoc review committees); (iii) drafting recommendations regarding the annual IUGS budget; (iv) preparing a report to be presented to the IUGS Council every four years before the election of a new EC; (v) arranging an external financial audit every four years. The FC mostly interacted remotely and physically met twice in London (12 March 2018, 30 November 2018). Among the various issues tackled by the FC are: (i) the status and improvement of financial investments, (ii) the allocation of surplus funds in relation to strategic priorities, (iii) the possibility of alternative business models for Episodes, (iv) the protection of IUGS intellectual property, and (v) an increased level of financial audit.

The Publications Committee (PC) was re-established by the IUGS Bureau at its first meeting in 2016. Brian Marker (UK) was reappointed as chair, and the committee members included Amel Barich (Morocco), Peter Bobrowsky (Canada), Fareeduddin Fareeduddin (India), Dolores Pereira (Spain) and Stan Finney as a representative of the EC. The Committee met in 2017 and again in 2018 when Brian Marker stood down and Dolores Pereira replaced him as Chair. Since 2018, the Committee membership also includes Stan Finney (EC member), Jin-Yong Lee (Editor of *Episodes*), Giuseppe Di Capua (Webmaster), and Gurmeet Kaur (Social Media editor). During meetings in 2018 and 2019, the PC drafted revisions to IUGS statutes. This not only set the membership of the committee, but also changes its term to the beginning and end in the second year after successive IGCs. The purpose is to maintain the PC and its critical ongoing

activities without interruption through the change over in the EC during the IGC year. Since 2016, the PC addressed many issues dealing with *Episodes*, such as the move of the editorial office from India to Korea, the development of an online manuscript submission and review process, online first publication, and policies statements for editors, authors, and reviewers. The PC reported on publication of books through the Geological Society of London, worked with the editors of the IUGS E-Bulletin to completely revise and rejuvenate it, set standards for content on Social Media and in the E-Bulletin, and advised the new webmaster on a re-design of the IUGS website.

Several Ad hoc Review Committees (ARCs) were appointed in 2017, 2018, and 2019 to provide timely and critical evaluation of IUGS funded activities. Following the completion of a review, an evaluation report is completed by the Committee Chair, submitted to the IUGS EC for approval and is subsequently published in *Episodes*. In 2017, ARC evaluations were conducted for the International Commission on Stratigraphy (ICS) and the Commission on Tectonics and Structural Geology (TecTask); in 2018, the Task Group on Global Geoscience Professionalism (TG-GGP) and the Task Group on Isotope Geology (TGIG); in 2019, the Commission on Global Geochemical Baselines (CGB) and the Commission for the Management and Application of Geoscience Information (CGI). Each ARC was composed of two EC members and two specialists from outside IUGS. Final ARC reports are published in *Episodes* and archived on the IUGS website.

The New Activities Strategic Implementation Committee (NASIC) was created in February 2013 in response to the recommendations of the last strategic plan. Since its creation, NASIC has been chaired by Edmund Nickless (UK). The work of the Committee is overseen by a group of eminent geoscientists from around the world. As from June 2016, other members of the Core Group are: Saleem Ali (USA), Fabio Masotti (Brazil), Larry Meinert (USA), Roland Oberhänsli (Germany), John Thompson (Canada), Anjian Wang (China) and Neil Williams (Australia). In addition the core group, there are Associated Members and Supporters. The task of this committee is to address how the projected two- to threefold increase by 2050 in societal demand for natural resources can be met sustainably. This resulted in establishment of the Initiative Resourcing Future Generations.

International Geological Congress Committee

In November 2017, the IUGS President, Secretary General, and Treasurer traveled to New Delhi to meet with the Local Organizing Committee for the 36th International Geological Congress. The visit included a meeting of the IGCC. The Congress location was visited and facilities inspected, and planning discussed. The LOC was made aware of the activities and needs of the IUGS at the Congress, and, in turn, the Bureau members offered encouragement and advice on organization of the Congress. The IGCC meet in New Delhi again in May 2019. Congress preparations by the LOC had progressed far since the 2017 visit. The IGCC meeting addressed the organization of the committee, the call for bids for the 38th IGC in 2028, and support for and schedule of IUGS activities at the Congress

As of 1 December 2019, the IGCC has received only one bid to host the 38th IGC IN 2028. The bid from the Russian National Committee of Geologists proposes to host the 38th IGC in St. Petersburg.

Interim RFG2018 Congress

The Resources for Future Generations Conference, RFG2018, was held in Vancouver, Canada in 16-21 June 2018. It was sponsored by IUGS and was considered as an Inter-IGC Meeting, but narrower in scope than an IGC. The RFG2018 conference was an outgrowth of collaboration between the IUGS and a number of organizations representing Canada's geoscience and geo-engineering communities. The conference attracted 3,500 scientists, policy-makers, industry representatives, educators, students, and members of civil society, including several IUGS constituent groups (e.g., CGI) and affiliated organizations sponsored symposia.

PUBLICATIONS/COMMUNICATIONS

A Memorandum of Understanding (MOU) exists between the IUGS and the Geological Society of London (GSL) to publish geoscience books of mutual interest. All IUGS funded activities (including Commissions, IGCP Projects, etc.) are expected to consider the GSL for publication of their work. Since 2016, 11 volumes were published under the agreement through GSL, and several others are in various stages of production.

Publication of the IUGS journal *Episodes* was transferred from the Geological Society of India to the Geological Society of Korea. Under the guidance of Brian Marker and the previous editor, the transfer was smooth. As mandated by the MoU, *Episodes* now has an online manuscript submission and review system and online-first publication. Jin-Young Lee now serves as Editor and Heejung Kim as Managing Editor. Recently, they have established a new website and standard cover for *Episodes*, and they have added DOIs to all publications since the first issue. Following the first year of transfer to Korea, all issue of *Episodes* have been published online to time; printed copies have been provided to key members of IUGS and to a few paying subscribers. The 2018 impact factor of 1.708 announced in June 2019 is significantly lower than in 2015 when it reached 3.263. *Episodes* is unique as a fully open access journal to both authors and readers; all articles from all issues can be downloaded from the journal website. However, the journal must recruit articles of interest to a much greater audience for the impact factor to rise significantly.

The IUGS Brochure was updated and redesigned in 2019.

The IUGS Annual Report was produced and distributed for the years 2016, 2017, and 2018 in early 2017, 2018, and 2019, respectively. That of 2019 will be distributed in early 2020. The IUGS Annual Report has increased in content and thus page numbers each year with the incorporation of contributions from a greater number of IUGS constituent groups. All reports are available in digital

format on the IUGS website..

The Union website has been well managed by Giuseppe Di Capua since 2017. It is now being redesigned. The IUGS E-Bulletin was upgraded in style and content with strict editorial control first by Kristine Asch (IUGS VP) and now by Silvia Peppoloni (IUGS Councillor). News articles from IUGS constituent groups highlight each issue, and each monthly issue appears regularly and on time. The Webmaster and E-Bulletin editor work closely with social media editor Gurmeet Kaur to ensure that timely news items and announcements appear more or less simultaneously in the E-Bulletin, on the Webpage, and in the IUGS Social Media, particularly Facebook. Publications in *Episodes* are publicized in the E-Bulletin and through the Social Media.

COMMISSIONS, TASK GROUPS AND INITIATIVES

Activities and individuals represented by these bodies reflect the scientific arm of the Union. The aim of all such groups is to address key and relevant topics that have a global relevance for the earth sciences, deal with topics not presently addressed by other bodies, involve the expertise of leading scientists from around the world and do so in a timely manner. Since all of these activities are directly funded by IUGS, regular Ad hoc reviews are undertaken, the results of which determine whether support for the program should be continued.

During the past four-year term the following IUGS Commissions were recognized:

International Commission on Stratigraphy (ICS)
Commission on the History of Geological Sciences (INHIGEO)
Commission on Geoscience Education, Training and Technology Transfer (COGE)
Commission on Management and Application of Geoscience Information (CGI)
Commission of Tectonics and Structure Geology (TECTASK)
Commission on Global Geochemical Baselines (CGGB)
International Commission on Geoheritage (ICG)

These Commissions remain active and maintain their own operative strategies and their informative communication strategy. For specific details on each Commission please visit the individual Commission websites:

ICS (<http://www.stratigraphy.org/>)
INHIGEO (<http://www.imhigeo.org/>)
COGE (<http://www.iugscoge.com/>)
CGI (<http://www.cgi-iugs.org/>)
TECTASK (<http://www.tectask.org/>)
CGGB (<http://www.globalgeochemicalbaselines.eu/>)
ICG (<https://geoheritage-iugs.mnhn.fr/>)

After many years of successful international projects the Task Group Global Geochemical Baselines was elevated to Commission status in 2016. Already, in 2019, the Commission received a most positive ARC review.

The Task Groups on GeoHeritage and on Heritage Stone were merged into a single Commission on Geoheritage, which was ratified by the Council in Cape Town. During its first term, the two subcommissions Heritage Sites and Collections and Heritage Stone have been productive. The former developed guidelines and a template for desktop evaluation of the geology of UNESCO Global Geopark proposals; the latter realized the IUGS ratification of several Global Heritage Stone Resources

Each commission obtains varying levels of financial support that are decided by the EC upon annual reports of their activities. Annual budgets for supporting the IUGS Commissions ranged from 70,000 to 95,000 USD since 2016.

The Union supported three formal Task Groups and two Initiatives (Forensic Geology and Resourcing Future Generations). The formal Task Groups represent activities that do not match “Commission” expectations, whereas the latter represent activities that have exceeded the capacity of Commissions and require focused attention on their own. Initiatives are viewed as medium term efforts that are in transition to independence such as a new society.

During the past four-year term the following formal Task Groups and Initiatives were in effect:

Task Group on Global Geoscience Professionalism (TGGGP)
Task Group on Geohazards
Resourcing Future Generations Initiative (RFG)
Forensic Geology Initiative (FGI)

The IUGS Executive Committee at its 2019 annual meeting in Beijing voted to disband the TGGGP after evaluation by the EC of the response by the Commission to its ARC review that was carried out in 2018.

The new Task Group on Geohazards was established in 2016, developed a network of scientific members among countries primarily of eastern Asia, and initiated production of hazard maps for the western Pacific.

The former Task Group on Isotope Geology and Geochemistry shifted to a Joint Programme with the International Union of Pure and Applied Chemistry to address topics such as updating geochronological decay constants and standardizing the use of SI units, etc.

The IUGS Initiative on Forensic Geology created in 2011 continues to be most active with workshops, training courses, and scientific meetings worldwide. Collaborations with police forces, governmental agencies, non-governmental organizations worldwide and the problems it addresses give unusual and important visibility to IUGS, while IUGS sponsorship gives legitimacy to IFG as an international scientific endeavour of high standard. Laurance Donnelly, the leader of the initiative gave a most impressive plenary lecture on forensic geology at the 2017 GSA Annual Meeting.

The IUGS Initiative Resourcing Future Generations was established by NASIC at the beginning of 2013. Since 2016, it has continued to make presentations at

major geoscientific meetings; taken an active part in events organized by the World Economic Forum, the UNEP International Resource Panel and various Horizon 2020 projects including IMPACT and STRADE; in April and November 2016 issued Calls for Proposals for small research grants to support work on RFG-related topics (as a result of which 12 grants averaging \$3k were made); participated in RFG2018, the first inter-IGC meeting; with iCRAG (Irish Centre for Research in Applied Geosciences), ran a Summer School for 42 postgraduate students in Dublin in July 2019; and based on the report of a workshop held in Namibia in the summer of 2015 continued to publish in peer reviewed journals on supply/demand issues and international resource governance.

IUGS Big Science Program: Digital Deep Time Earth (DDE)

During the 72nd EC meeting in Potsdam in 2018 IUGS President Qiuming Cheng proposed that IUGS establish a big science program, modeled in a sense after IGCP, to give recognition by IUGS to international, multidisciplinary projects with the potential to make great scientific and societal impact. Furthermore, he conceived of the Deep-time Digital Earth (DDE) project as the first such big science project. The project was well advertised, and representatives from potential partner organizations were invited to a kickoff event at the 73rd EC Meeting in Beijing in February 2019 where DDE was endorsed by the IUGS EC. Since then a steering committee has worked to establish a structure for DDE. Statutes and Bylaws are being developed. The Scientific Committee will meet at the 2020 EC meeting in Busan to further development and refine scientific objectives.

The mission of DDE is to harmonize global Deep-time Digital Earth data, and share global geoscience knowledge. Its vision is to transform Earth science. Modern Earth systems science requires harmonized global Deep-time Earth data. This harmonization is now possible through the digital revolution, but new protocols, platforms and programs are needed to secure compatible and interoperable databases in order that the vast amounts of existing (and new) geoscience data can be linked for the benefit of scientific investigations that address issues of concern to the global society. Big Data analytics, internet cloud computing, data mining, machine learning, and artificial intelligence will lead to innovation in understanding the Earth's evolution and in addressing Sustainable Development Goals. Freeing 'volunteer' generated information is fundamental to creating big Earth data. Appropriate mechanisms and artificial intelligence techniques need to be sought to motivate, facilitate and assist organizations and geoscientists to make their data FAIR (Findable, Accessible, Interoperable, and Re-usable). Research will focus on four evolutionary topics: Life – global biodiversity; Materials – investigation of spatio-temporal distribution; Geography – better palaeogeographic reconstructions; Climate adaptation.

COOPERATION WITH UNESCO – International Geoscience and Geoparks Program

The IUGS maintains a long history of positive and mutual cooperation with UNESCO. Previously this relationship was managed with the Earth Sciences

Division of UNESCO but following the dissolution of that department the responsibility shifted to the newly amalgamated Division of Ecological and Earth Sciences.

Initiated jointly by IUGS and UNESCO in 1972, the International Geoscience Programme (IGCP) formerly called the International Geological Correlation Programme remains a primary focus of attention for both organizations as the key geoscientific activity for the global community. In 2015, IGCP was incorporated with the UNESCO Global Geoparks Program (UGGp) into the flagship International Geoscience and Geoparks Programme (IGGP) at UNESCO. IUGS is an equal partner with UNESCO in the IGCP science program and provides the names of individuals for the scientific board and for the reviewers of the proposals submitted from the geological community. Since 2016, the annual contribution of IUGS to the support of the IGCP is \$60,000 USD. Through the joint agreement between IUGS and UNESCO, IGCP continues to annually fund approximately 20 active projects. For details about IGCP: <http://www.unesco.org/new/en/natural-sciences/environment/earth-sciences/international-geoscience-programme/igcp-projects/>.

The IUGS Secretary General, or the representative of the SG, serves as an ex-officio member of the UGGp Council with the responsibility of arranging desktop assessments of the geology presented in applications of aspiring global geoparks. Since the 71st EC meeting in 2017, IUGS Past-President Roland Oberhänsli severed as the SG representative. He managed desktop reviews, and he encouraged the Working Group on Geoheritage Assessment (International Commission on Geoheritage) to develop guidelines and a template for assessment of geopark proposals. Those documents were presented to the UGGp Council in 2019. Also in 2019, Benjamin Van Wyk De Vries, Secretary General of the Heritage Sites and Collection Subcommittee of ICG, replaced Roland Oberhänsli as the SG representative, and now represents IUGS in discussions with the UGGp Council on the new guidelines and template.

COLLABORATION OF IUGS WITH ISC AND ISC-GEOUNIONS

The International Science Council (ISC) held its first General Assembly in Paris in July 2018 following the merger of ICSU and ISSC into the new Council. IUGS President Qiuming Cheng participated in the steps leading up to the merger and in the nominations and elections of the new Governing Council of ISC and in the development of new ISC initiatives. Subsequently, he was appointed as a member of the ISC Committee for Science Planning for a 3-year term beginning July 2019. IUGS closely followed the development of the ISC 2019-2021 action plan and developed the research initiative Deep-time Digital Earth (DDE) as a means of contributing to the ISC Strategic Challenge Domains, particularly the Digital Revolution.

IUGS has long maintained a leadership position among the Geounions in ISC. GeoUnions is a network of 9 international scientific unions dealing with Earth and space sciences. President Prof. Cheng Qiuming attended meetings of the GeoUnions and worked closely with them on ISC matters and also encouraged their participation in DDE. Furthermore, President Cheng attended the 100th

Anniversary Celebration of the International Union of Geodesy and Geophysics (IUGG) at UNESCO - Paris in July 2019.

OTHER

IUGS maintains close collaboration with the Commission for the Geological Map of the World (CGMW). IUGS and CGMW have shared exhibition booth at the European Geological Union (EGU) meetings in Vienna. IUGS attends the biennial meetings of CGMW.

IUGS is an Associate Member of OneGeology and supports the program with an annual subscription. Members of CGI developed the interoperability of global geoscience data that links geologic maps.

The International Lithosphere Program (ILP) promotes multidisciplinary research projects of interest to both the geological and geophysical communities; the two unions, IUGS and IUGG, support ILP equally.

Respectfully submitted by
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