

IUGS - International Union of Geological Sciences

Activities' Report – Year 2021

Prof. Rodolfo Carosi

1. Introduction

Founded in 1961, the International Union of Geological Sciences (IUGS) is one of the largest and most active scientific NGOs in the world. The IUGS promotes and supports the study of geological problems of global interest and facilitates cooperation and interdisciplinarity in the Geological Sciences. As one of the major Union of the International Science Council, the IUGS has more than 110 member nations and represents more than fifty scientific associations.

2. Main activities carried on by (Union name) during 2021 relevant for Italy and for CNR

The activities of the IUGS Commissions are the basis of the daily work of geologists, in Italy and around the world. Nomenclatures, classifications, normative parameters, analytical procedures, protocols - the so-called geostandards - are studied and conventionally established by the IUGS Commissions. The IUGS is also active in identifying and promoting emerging issues -such as Medical Geology- and/or issues with strong social and civil connotation -e.g. Forensic Geology- and represents an international consensus platform in geological practices. Also in this case, it is difficult to identify the effects, even if considerable, of the various IUGS activities at the individual nations' level. However, we can consider the founding of the Association of Medical Geology and the Forensic Geologists Association as a national fallout of the IUGS activities.

The intense and very important activity aimed at promoting and disseminating Geoethics both nationally and internationally, with the active participation of Italian researchers, led to the recent publication of a book on this important and delicate topic (Silvia Peppoloni and Giuseppe Di Capua).

If geologists from all over the world speak a common language and can effectively compare the results of research and professional and industrial activity, it is also thanks to the IUGS which, for over half a century, has been promoting and fostering discussion and consensus among the geoscientists' community.

The new IUGS commission on the nomenclature of igneous rocks -Task Group on Igneous Rocks (TGIR) chaired by Prof. M. Lustrino, University of Rome- has started an important work of revision and updating.

As part of the activities of the TecTask Commission (Tectonics and Structural Geology) in collaboration among the Universities of Turin, Catania and Aberdeen, two international congresses has been organized to be held: 'YORSGET' congress in Sicily from 29 June to 3 July 2022 and 'Deformation, Rheology and Tectonics' congress to be held in Catania from 4 to 10 July 2022.

Two geosites have been proposed from the Italian geological community as part of the international initiative: The First 100 IUGS Geological Heritages Sites. The first 100 geosites will be selected during an international congress in Spain next October 2022.

3. Activities carried on by (Italian Delegate name) within the Union during 2021 and impact on the Italian scientific community

As the Italian delegate at the IUGS, with the help of the Commission's secretariat, I promptly disseminated all communications from the Executive Committee and the Secretariat within the commission itself and within the national scientific community through the mailing list and newsletters of the Italian Geological Society. Of particular importance is the attention placed on Italian participation in the creation of geoparks and the contribution to the appointment of Italian scientists for IUGS commissions and awards.

4. Evaluation of the participation in terms of benefits and membership cost

As pointed out several times, it is very difficult to fully assess the direct benefits of participation in the IUGS. The activity of the IUGS is fundamental and unique for researchers of the various disciplines of the Earth Sciences, geological

services, analysis laboratories, and professionals and even for students of geological disciplines. From this point of view, the support of the CNR, as well as of the various Academies, Geological Services, Ministries, and research Bodies of the over one hundred countries adhering to the IUGS, must be seen and interpreted as a support for a basic and widespread international activity, essential for the entire global system of research in the field of Earth Sciences. This support is even more important in a period of pandemic that has severely limited the activities and development of Earth Sciences (and beyond) for more than a year.

5. Evaluation of Italians' attendance and how to improve interest and involvement

The Italian community has always been significantly involved in the various activities of the IUGS, both at organizational and scientific level. As for the Italian participation, in the program of international scientific cooperation IGCP (IUGS-UNESCO, it is noted that Laura Peruzza (OGS, Trieste) has having approved your IGCP funding request _IUGS-IGCP 669: 'Identification of seismogenic faults in populated areas of Latin America and its incorporation into seismic hazard assessment'.

6. Italian experts with important roles within the Union or within related Commissions and Programs (if known)

Italian representatives are part of the main management bodies of the IUGS, namely the Bureau and the Executive Committee, and chair or participate in the activities of various IUGS Committees and Commissions. Italy currently has two representatives of ten members in the Executive Committee. Together with Germany, it is the only country with two representatives. As regards the IGCP international scientific cooperation program (IUGS/UNESCO), currently a project is directed by an Italian researcher (see point 5). Below is the list of Italian representatives.

CAVAZZA William, IUGS Finance committee
DI MAGGIO Rosa Maria, Officer for Europe, Initiative on Forensic Geology
PEPPOLONI Silvia, IUGS Councillor
DI CAPUA Giuseppe, Publications Committee
PETRIZZO Maria Rosa, Chair, Cretaceous Subcommission of the IUGS International Commission on Stratigraphy
RAFFI Isabella, Chair Neogene Subcommission of the IUGS International Commission on Stratigraphy
RICCI Alberto Carlo, Representative IUGS in SCAR (Scientific Committee on Antarctic Research)
MONECHI Simonetta, Chair Paleogene Subcommission of the IUGS International Commission on Stratigraphy
VACCARI Ezio, Vice-President, IUGS Commission on the History of Geological Sciences
VILLA M. Igor, Chair IUGS Task Group on Isotope Geology and Geochronology
CAROSI Rodolfo, Chair IUGS commission on Structural Geology and Tectonics (TecTask)
LUSTRINO Michele, Chair of the new Task Group to integrate and revise the classification and nomenclature of igneous rocks

During the EC held in Busan (Korea) in January 2020, Italy was one of the countries with the greatest participation in the IUGS initiatives both in terms of the number of researchers and presence in the top roles of various bodies (45 people, hereafter listed.

ADANEZ Paula, Scientific Secretary, Commission on Global Geochemical Baselines
AGNINI Claudia, Padova, Secretary/Voting Member, ICS Subcommission on Paleogene Stratigraphy
ANGIOLINI Lucia, Milano, Chair, ICS Subcommission on Permian Stratigraphy
BAGNOLI Gabriella, Pisa, Voting Member, ICS Subcommission on Cambrian Stratigraphy
BALINI Marco, Milano, Voting Member, ICS Subcommission on Triassic Stratigraphy
BARONE Pier Matteo, Rome, Crime Scene Advisor, Initiative on Forensic Geology
CAROSI Rodolfo, Torino, Member and Past Chair, Commission on Tectonics and Structural Geology
CAVAZZA William, Bologna, Chair, IUGS Finance Committee; Science Committee, Deep-time Digital Earth Big Science Program
COCCIONI Rodolfo, Chair, Rupelian/Chattian Boundary Stratotype Working Group, ICS Subcommission on Paleogene Stratigraphy; Member, the Campanian Working Group, ICS Subcommission on Cretaceous Stratigraphy; Member, the Aptian Working Group, ICS Subcommission on Cretaceous Stratigraphy
CORRADINI Carlo, Trieste, Webmaster/Voting Member and D-C Boundary Working Group Member, ICS Subcommission on Devonian Stratigraphy; Vice 17 President, ICS Subcommission on Silurian Stratigraphy
CRAIG Jonathan, Milan, IGCP council member - Earth Resources

DI CAPUA Giuseppe, Webmaster, IUGS Publications Committee
 DI MAGGIO Rosa Maria, Rome, Officer Europe, Initiative on Forensic Geology
 DINARÈS-TURELL Jaume, Rome, Voting Member, ICS Subcommission on Paleogene Stratigraphy
 DOMINICI Stefano, Firenze, Webmaster, ICS Subcommission on Paleogene Stratigraphy
 ERBA Elisabetta, Milano, Chair, the Aptian Working Group, ICS Subcommission on Cretaceous Stratigraphy; Member, the Barremian Working Group, ICS Subcommission on Cretaceous Stratigraphy
 FALZONI Francesca, Napoli, Secretary General, ICS Subcommission on Cretaceous Stratigraphy
 FORESI L. M., Member, Working Group on Langhian and Burdigalian GSSPs, ICS Subcommission on Neogene Stratigraphy
 GIANOLLA Piero, Ferrara, Voting Member, ICS Subcommission on Stratigraphic Classification
 MUTTONI Giovanni, Milano, Member, the Campanian Working Group, ICS Subcommission on Cretaceous Stratigraphy
 IACCARINO Silvia. M., Member, Working Group on Langhian and Burdigalian GSSPs, ICS Subcommission on Neogene Stratigraphy
 IACCARINO Salvatore, Treasurer, Commission on Tectonics and Structural Geology
 PRIMOLI SILVA Isabella, Milano, Member, the Campanian Working Group; Member, the Barremian Working Group; Member, the Valanginian Working Group, ICS Subcommission on Cretaceous Stratigraphy
 LIRER Fabrizio, Napoli, Voting Member, ICS Subcommission on Quaternary Stratigraphy; Voting Member, ICS Subcommission on Neogene Stratigraphy
 LUSTRINO Michele, Rome, Chair, Task Group on Igneous Rocks
 MARIANO Parente, Napoli, Member, the Aptian Working Group, ICS Subcommission on Cretaceous Stratigraphy
 MARINI Paola, Turin, Leader IGCP 637 - Heritage Stone Designation
 MARIO Sprovieri, Member, the Campanian Working Group, ICS Subcommission on Cretaceous Stratigraphy
 MATTEO Maron, Milano, Member, the Campanian Working Group, ICS Subcommission on Cretaceous Stratigraphy
 MIETTO Paolo, Padova, Voting Member, ICS Subcommission on Triassic Stratigraphy
 MONECHI Simonetta, Chair, Paleogene Calcareous Nannofossils Working Group, ICS Subcommission on Paleogene Stratigraphy
 NICORA Alda, Milano, Voting Member, ICS Subcommission on Triassic Stratigraphy
 PAPAZZONI Cesare, Chair, Paleogene Larger Foraminifera Working Group, ICS Subcommission on Paleogene Stratigraphy
 PEPOLONI Silvia, Rome, Councilor (2018-2022), International Union of Geological Sciences
 PETRIZZO Maria Rose, Milano, Chair, ICS Subcommission on Cretaceous Stratigraphy; Member, the Campanian Working Group of SCS/Voting Member, 18 ICS Subcommission on Stratigraphic Classification
 RAFFI Isabella, Chieti Scalo, Voting Member, ICS Subcommission on Stratigraphic Classification; Voting Member, ICS Subcommission on Neogene Stratigraphy
 RONCHI Ausonio, Pavia, Voting Member, ICS Subcommission on Permian Stratigraphy
 ROOK Lorenzo, Pavia, Officer, ICS Subcommission on Neogene Stratigraphy
 SABRINA Amodio, Napoli, Member, the Aptian Working Group, ICS Subcommission on Cretaceous Stratigraphy
 SOLDATI Mauro, Governing Council, Deep-time Digital Earth Big Science Program
 SPALLETTA Claudia, Bologna, Member D-C Boundary Working Group Member; Voting Member, ICS Subcommission on Devonian Stratigraphy
 STEFANO A. Di, Member, Working Group on Langhian and Burdigalian GSSPs, ICS Subcommission on Neogene Stratigraphy
 TIBALDI A., Chairperson – Committee of National Representatives, International Lithosphere program
 TURCO Elena, Parma, Vice Chair, ICS Subcommission on Neogene Stratigraphy
 VACCARI Ezio, Varese, President, International Commission on History of Geological Sciences

7. If Union with CNR Commission, short summary about the 2021 CNR Commission activities

The CNR-IUGS Commission was reconstituted with Provision of the CNR President n. 37 of 01.04.2019 and will remain in office until 31 December 2022. The members of the Commission are: Dr. Daniela Di Bucci, Prof. Carlo Doglioni, Dr. Massimo Frezzotti, Dr. Biagio Giaccio, Prof. Simonetta Monechi, Prof. Isabella Raffi, Dr. Guido Ventura, Dr. Marco Amanti, Prof. Carlo Baroni, Dr. Giacomo Corti, Dr. Antonello Provenzale. Prof. William Cavazza and Prof. Silvia Peppoloni IUGS Liaison.

The Italian National Commission of the IUGS publishes in electronic format an annual report on the International Geoscience Program (IGCP) which is distributed to the entire scientific community of Earth Sciences through the Italian Geological Society. The report reaches more than 2,000 geoscientists.

The Commission also has the task of providing guidelines and proposals for greater Italian participation in the Union's activities and providing the necessary support to the CNR on issues concerning international initiatives and activities

promoted by the IUGS. The activities carried out by the Commission in 2021 include:

- Dissemination of the IUGS 2020 Annual Report within the Commission, the CNR and the Italian community;
- Dissemination of news of interest to the IUGS national community published in the IUGS Newsletters in 2021;
- Sending the Italian Report CNR-IUGS-IGCP 2021 to the IUGS and publication of the same on the CNR website on the relative page;
- Endorsement of the CNR-IUGS Commission to two Italian project proposals submitted for funding to the IGCP project 2021: a) "The Cimmerian Continents Geopuzzle: insights in its paleogeographic and paleoclimatic reconstructions" by the University of Milan; b) "RESOURCES4ALL. Natural resources: the value of raw materials in the context of good mining practices "by the University of Catania;
- Forwarding of the letters of the IUGS President Prof. John Ludden elected for the period 2020-2024;

Finally, the activities of the Italian IUGS Commission will be presented in the context of the next joint congress of the Italian Geological Society and the Italian Society of Mineralogy and Petrology to be held in Turin, 19-21 September 2022 where the participation of over a thousand people with approximately 900 presentations.

The Commission does not directly organize activities for the dissemination of scientific culture. However, some members of the Commission participated in the organization of the 2021 edition of the "Week of Planet Earth" (October 2021), a series of events aimed at promoting awareness of geological issues among the public, developed simultaneously on throughout the national territory. The last edition of the Week, which acquired an annual frequency, included more than 100 events and the participation of thousands of people.

Michele Lustrino (La Sapienza University of Rome) is Chair of the TASK GROUP on igneous rocks approved at the end of 2020 by IUGS. The group aims to update the IUGS classification of igneous rocks almost 20 years after the release of the second edition of the international reference text. The work of the group, made up of an international representation of petrographers and geochemists, has already started and intends to intervene on the existing classification and nomenclature by proposing a new taxonomy.

8. Conclusions

The widespread perception in the Italian Earth Sciences community is that the IUGS plays a fundamental role in defining the geostandards and formal terminology shared and used by the global geological community (stratigraphic, structural and petrographic nomenclature, definition of stratotypes, analytical standards, etc.) and in the promotion of global and multidisciplinary activities. Not so widespread is the knowledge of other important IUGS activities in the field of knowledge transfer, geoeducation, promotion of geological knowledge in developing countries, as well as in some specific international research projects. As regards the dissemination of knowledge, some Italian researchers belonging to TecTask (Rodolfo Carosi and Salvatore Iaccarino) have started and are responsible for the monthly publication of seminars on Tectonics and Structural Geology on a dedicated YouTube channel and the revision and updating of the Outcropedia platform, dedicated to the knowledge of the best outcrops of rocks of considerable interest, through the geolocation of images on a digital topographical basis. An updated glossary/vocabulary of Tectonics and Structural Geology (wikiterminology) was also edited within the TecTask. We also note the Italian guide of the new TASK GROUP - IUGS on the revision of the nomenclature of igneous rocks (M. Lustrino). Last but not least, the closed collaboration with the Italian Geological Society is important to disseminate information to the vast geological community in Italy.

Torino, May 13th, 2022

Prof. Rodolfo Carosi

