

IUGS - International Union of Geological Sciences

Activities' Report – Year 2022

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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 2022 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.

Worth mentioning is the intense and very important activity aimed at promoting and disseminating Geoethics both nationally and internationally, with the active participation of Italian researchers which saw the creation of a book and numerous publications on this important and delicate topic (Silvia Peppoloni and Giuseppe Di Capua) and the recent official recognition of the IUGS Geoethics Commission (February 2023).

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 completing 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, the international congress 'YORSGEOT' has been organized in Sicily from 29 June to 3 July 2022 and the international congress 'Deformation, Rheology and Tectonics' held in Catania from 4 to 10 July 2022.

Five geological heritage sites have been approved by IUGS as part of the international initiative: 'The First 100 IUGS GEOLOGICAL HERITAGE SITES'. The first 100 geosites were selected during an international congress in Spain held in October 2022 and published in a book.

3. Activities carried on by (Italian Delegate name) within the Union during 2022 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, the largest and oldest Italian scientific society in the field of Geosciences.

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 time of international difficulty in finding raw materials and growing attention to the environment.

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.

Italy is 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

LISTRINO 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

PEPPOLONI 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 Subcommittee on Neogene Stratigraphy
VACCARI Ezio, Varese, President, International Commission on History of Geological Sciences

7. If Union with CNR Commission, short summary about the 2022 CNR Commission activities

The CNR-IUGS Commission was reconstituted with Provision of the CNR President n. 37 of 01.04.2019 and ended its mandate on 31 December 2022. The members of the Commission were: 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 published 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 had 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 2022 include:

- Dissemination of the IUGS 2022 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 2022;
- Sending the Italian Report CNR-IUGS-IGCP 2022 to the IUGS and publication of the same on the CNR website on the relative page;
- Forwarding of letters from IUGS President Prof. John Ludden elected for 2020-2024;
- Presentation of IUGS, of its activities (TecTask, Outcropedia, Terminology etc) and of the Italian Commission CNR-IUGS, by poster, within the joint national congress SGI-SIMP in Turin on 19-21 September 2022. The congress seen the participation of over 1200 participants.

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 2022 edition of the "Week of Planet Earth" (October 2022), 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, formed by 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 activity of the Commission is essential to promote, in a more capillary way in our country, the numerous activities and initiatives of IUGS at international level. The dissemination, knowledge and participation in international initiatives is increasingly important in the field of Geology and allows for a better valorisation of the Earth Science community at an international level. The Italian geological community is among the most active in the IUGS field on various fronts and various topics, primarily in the International Commission of Stratigraphy, in Geoethics (chair Silvia Peppoloni), and in History of Geological Sciences (chair Ezio Vaccari). The Italian guide of the new TASK GROUP - IUGS on the revision of the nomenclature of igneous rocks (M. Lustrino, University of Rome) should be highlighted. As part of the dissemination of knowledge, some Italian researchers belonging to the TecTask (Rodolfo Carosi and Salvatore Iaccarino, University of Turin) have started for some time now and are responsible for the publication of Tectonics and Structural Geology seminars on a dedicated YouTube channel and the revision and update of the Outcropedia platform, dedicated to the knowledge of the best rock outcrops of considerable interest, through the geolocation of images on a digital topographic basis. A special APP has recently been developed for the direct upload of geoimages directly from a tablet or mobile phone. Also, within the TecTask, an updated glossary/vocabulary of Tectonics and Structural

Geology (wikiterminology) has been edited. Furthermore, Italian researchers are actively involved in the transition of the TecTask to a newly established International Association of Structural Geology and Tectonics, recently recognized and approved by IUGS. The close collaboration relationship with the Italian Geological Society is essential for disseminating information to the vast geological community in Italy.

The COVID-19 pandemic has limited some activities of the CNR-IUGS Commission in the four-year period 2019-2022. Despite the difficulties, the Commission met online when needed and worked collectively with decisions made via email circular exchange. Among these, we highlight the endorsement of the CNR-IUGS Commission to Italian project proposals submitted to the IGCP to receive funding.

Italy turned out to be one of the countries with the greatest participation in IUGS initiatives both in terms of number of researchers and presence in the top positions of various bodies.

Torino, May 15th, 2023

Prof. Rodolfo Carosi

