



Annual Report for the IUGS

Chief Accomplishments 2021 and Plans 2022

January 2022

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INTERNATIONAL UNION OF GEOLOGICAL SCIENCES (IUGS)

Reporting Form for IUGS Affiliated Organizations 2021

1. Name of Affiliated Organization

IAPG – INTERNATIONAL ASSOCIATION FOR PROMOTING GEOETHICS

<https://www.geoethics.org/>

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The IAPG was legally recognized as a not-for-profit organization through a public notarial deed on 21st December 2012, repertoire no. 16255, collection no. 8340, Italian Republic.

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The IAPG is an affiliated organization of the **International Union of Geological Sciences (IUGS)**, an International Associate Organization of the **American Geosciences Institute (AGI)**, an Associate Society of the **Geological Society of America (GSA)**, an Associate Society of the **Geological Society of London (GSL)**, a member organisation of the **International Council for Philosophy and Human Sciences (CIPSH)**, an Associate Organisation of the **Geoscience Information in Africa - Network (GIRAF)**, an Observer Organization of the **Canadian Federation of Earth Sciences (CFES)**.



The IAPG has agreements of cooperation with: **European Federation of Geologists (EFG), EuroGeoSurveys (EGS), American Geophysical Union (AGU), International Association of Hydrogeologists (IAH), International Association of Geomorphologists (IAG/AIG), Initiative on Forensic Geology (IUGS-IFG), African Association of Women in Geosciences (AAWG), International Association for Engineering Geology and the Environment (IAEG), Geological Society of Africa (GSAf), Geoscientists Canada (GC), Berufsverband Deutscher Geowissenschaftler e.V. (BDG), Associação Portuguesa de Geólogos (APG), Sociedad Geológica de Chile (SGCh), The National and Kapodistrian University of Athens - Applied Philosophy Research Laboratory (NKUA-APRL), Geology for Global Development (GfGD), The Turkish Chamber of Geological Engineers - Jeoloji Mühendisleri Odası (JMO), Maden Jeologları Derneği - Turkish Association of Economic Geologists (MJD), Association of Environmental & Engineering Geologists (AEG), International Network of Young and Early-Career Geoscientists (YES), International Geoscience Education Organisation (IGEO), Forum for Climate Engineering Assessment (FCEA), Sociedad Geológica del Perú (SGP), Instituto de Geociencias Y Medio Ambiente, Arequipa-Perù (I-GEMA), African Network for Geo-Education (ANGE), and GEVAS Red Argentina.**





The IAPG was Global Partner of the **International Year of Global Understanding (IYGU)**, Technical Partner of the IUGS Conference **Resource for Future Generation - RFG2018**, and Summit Partner of the **Geoscience & Society Summit 2019**.



Finally, the IAPG is partner of the **AGU Ethics & Equity Center** (<https://ethicsandequitycenter.org/>), supporting partner of the **Equality, Diversity, and Inclusion in Geoscience (EDIG)** project by iCRAG (<https://www.icrag-centre.org/edig/>), and media partner of the **UNESCO Lecture Series** “Earth Materials for a Sustainable and Thriving Society”, co-organized by iCRAG and IUGS (<https://www.icrag-centre.org/news-and-media/conferences-and-events/earthmaterialssustainability.html>).



2. Overall objectives

The IAPG is a multidisciplinary, scientific network for widening discussion and creating consciousness regarding problems of ethics applied to the geosciences, in particular on the ethical, social and cultural implications of geoscience knowledge, research, practice, education and communication. Its overall objectives are:

- developing the discussion on ethical implications in research and practice of geosciences among geoscientists and into society, making geoethics an essential point of reference for any action on land, waters and atmosphere usage that all stake-holders and decision-makers must take into proper account;
- increasing the base research on geoethics and strengthening it with a scientific perspective;
- promoting geoethics values and principles through international cooperation, encouraging the involvement of geoscientists worldwide, with a special attention to those in low income countries;
- fostering the dissemination of geoethics through websites and social networks, the publication of scientific papers, the organization of meetings and sessions/symposia on geoethics within national and international scientific events;
- encouraging the establishment of both regional and specialty groups; and
- cooperating with national and international organizations whose aims are complementary to those of the IAPG.

The achievement of the IAPG objectives will lead to the:

- identification of methods for a more effective application of geoethical values and principles in geoscience practice and research;
- reflection on the role that geoscientists can have in society and the identification of suitable forms, positions, means and actions to be adopted by them;
- growth of awareness about individual, professional, social, and environmental responsibility, both as geoscientists and as members of civil society;
- involvement of the societal communities in the idea of a common and shared “geo-heritage”, to be considered as a cultural, educational and scientific value, as well as an economic resource;
- cultural renewal in the way humans perceive and relate to the planet; and
- the sensitization towards the defense of life and the richness of the Earth.

The IAPG works to develop theoretical and practical activities covering a wide range of contents comprising: philosophy of geosciences and history of geosciences thinking; research integrity and professionalism in geosciences; working climate issues and related aspects; geoethics in georisk and disaster risk reduction; responsible georesources management; ethical and social aspects in geoeducation and geosciences communication; geoethics applied to different geoscience fields including economic geology, paleontology, forensic geology and medical geology; ethical and societal relevance of geoheritage and geodiversity; sociological aspects in geosciences and geosciences-society-policy interface; geosciences for sustainable and responsible development; geoethical implications in global and local changes of socio-ecological systems; ethics in geoengineering; ethical issues in climate change and ocean science studies; ethical implications in geosciences data life cycle and big data; and ethical and social matters in the international geoscience cooperation.

3. Relate goals to overall IUGS scientific objectives

The IAPG goals are strongly related to the IUGS's aims. This is evident by comparing the IUGS and IAPG Constitutions. IAPG activities aim to encourage thought, develop ideas and to find best practice solutions regarding global issues (such as geohazards, Earth resources, climate change, geoscience communication and geo-education) with the goal to sustain Earth's natural environment, to use all natural resources wisely and to mitigate the impacts of geohazards for the benefit of society in the attainment of their economic, cultural and social goals. Moreover, the IAPG is involved in promoting geo-education in the widest sense, facilitating interactions among geoscientists from all parts of the world, encouraging international cooperation, and fostering the dissemination of geoethics themes in society.

4. How has the organization been actively involved with IUGS related activities

- The IAPG is co-sponsoring session EOS4.1 "Geoethics in the face of global anthropogenic changes: how do we intersect different knowledge domains?" with the IUGS at the EGU General Assembly 2022 that will be held in Vienna (23-27 May 2022) (<https://meetingorganizer.copernicus.org/EGU22/session/43042>).
- The IAPG is cooperating with the IUGS-Initiative on Forensic Geology (IFG), within a joint Task Group, to prepare a White Paper on Geoethics in Forensic Geology.

- The IAPG is collaborating with numerous geoscience organizations affiliated to the IUGS, as previously indicated in the list of agreements for cooperation (<https://www.geoethics.org/affiliations-agreements>).
- The IAPG was a media partner of the UNESCO Lecture Series “Earth Materials for a Sustainable and Thriving Society”, co-organized by iCRAG and IUGS.

5. Structure and organization

All the IAPG members, including officers, are volunteers.

The bodies of the Association are the:

- 1) Executive Council;
- 2) General Assembly.

The **Executive Council** (<https://www.geoethics.org/executive-council>) consists of:

- a) a President (Prof. Stefano Tinti);
- b) two Vice-Presidents (Prof. Susan Kieffer; Dr. Shrikant Limaye);
- c) a Secretary General (Prof. Silvia Peppoloni);
- d) a Treasurer (Dr. Giuseppe Di Capua);
- e) six Continental Coordinators (Dr. Peter Bobrowsky, Prof. Roberto Greco, Dr. Nic Bilham, Prof. Ezzoura Errami, Dr. Meng Wang, Dr. Margaret Brocx).

The **General Assembly** (<https://www.geoethics.org/ga>) consists of all the IAPG members. The 1st General Assembly was held in Cape Town (South Africa) at the 35th IGC (31 August 2016). The 2nd General Assembly was to be held in Delhi (India) at the 36th IGC (March 2020). Unfortunately it has been postponed due to the SARS-CoV-2 pandemic.

The membership to the IAPG is free. Applicants need to complete an online form at <https://www.geoethics.org/membership>, or send their data via email to the IAPG Secretariat. Currently the **IAPG network** comprises **2834 members** from **127 countries** on **5 continents**.

The IAPG is also represented in **35 countries through national sections** (<https://www.geoethics.org/sections>) (coordinators in brackets): **Afghanistan** (Mohammad Salem Hussaini and Asadullah Farahmand), **Argentina** (Elizabeth I. Rovere and Roberto A. Violante), **Bangladesh** (Abdul Baquee Khan Majlis and Jahangir Alam), **Bolivia** (Wilfredo Ramos

Collorana), **Brazil** (Eduardo Marone), **Cameroon** (Njilah Isaac Konfor and Ndzishepngong Kelvin Ngwang), **Canada** (Paul Hubley), **Chile** (Luisa Pinto Lincoñir), **Cuba** (Yurisley Valdes Mariño), **Democratic Republic of Congo** (Jean-Robert Mweze), **Egypt** (Kholoud M. Abdelmaksoud), **France** (David Crookall), **Germany** (Simon Schneider and Dominic Hildebrandt), **Greece** (Gerassimos A. Papadopoulos and Maria V. Triantaphyllou), **India** (Surya Gupta Parkash), **Iraq** (Nawrass N. Ameen and Ameer Hayder Khalid), **Iran** (Parviz Armani), **Italy** (Silvia Peppoloni), **Jordan** (Mamoon Allan), **Lebanon** (Soumaya Ayadi-Maasri), **Malawi** (Hilton Banda Eneya), **Mexico** (Miguel Rangel Medina), **Nepal** (Shree Prasad Vista and Ranjan Kumar Dahal) **Nigeria** (Arinze Harrison Ikwumelezech), **Pakistan** (Muhammad Yaseen and Emad Ullah Khan), **Paraguay** (Moisés Alejandro Gadea Villalba), **Peru** (Pedro Isique), **Portugal** (Clara M. da Silva de Vasconcelos and Paulo Emanuel Talhadas Ferreira da Fonseca), **Romania** (Antoneta Seghedi and Ilies Dorina Camelia), **Spain** (Domingo A. Martín Sánchez), **Turkey** (Yüksel Örgün Tutay and Dündar Çağlan), **Ukraine** (Yuriy Kostyuchenko), **United Kingdom** (Antony Benham), **USA** (Vincent S. Cronin and Cindy M. Palinkas), and **Uruguay** (Leda Sánchez Bettucci).

IAPG-Afghanistan, IAPG-Bolivia and IAPG-Germany were established in 2021.

The IAPG relies on a **Board of Experts (BE)** (<https://www.geoethics.org/experts>) on specific issues related to geoethics. The BE has the important practical function of suggesting themes, articles, and initiatives to our community. The BE is interested in Earth sciences and humanities and in promoting issues on geoethics and the IAPG. Currently the board includes **15 experts**: Martin Bohle, Germany (topic: **Exploring Societal Frameworks of the Earth Sciences**); Elizabeth Silva, Portugal (topic: **Geoethics and Geoparks**); Robert Frodeman, USA (topic: **Geoethics and Philosophy**); Madhumita Das, India (topic: **Geoethical aspects in low income countries**); Juan Carlos Gutierrez-Marco (topic: **Geoethics in Paleontology**), Christine McEntee, USA (topic: **Harassment and Discrimination in Geosciences**); Iain Stewart, United Kingdom (topic: **Geoscience Education and Communication**); Mike Buchanan, United Kingdom (topic: **Geoethics in Speleology**), Edmund Nickless, United Kingdom (topic: **Geoethics for Society**); David Mogk, USA (topic: **Geo-education and Teaching Geoethics**); Ruth Allington, United Kingdom (topic: **Geoscience Professionalism**), Luis González de Vallejo, Spain (topic: **Geoethics in Engineering Geology**); Manuel João Florentino Gomes Abrunhosa, Portugal (topic: **Geoethics in Groundwater Management**), Tony Mayer, United Kingdom (topic: **Research Integrity**); and Ciro Manzo, Italy (topic: **Geoethics and young geoscientists**).



IAPG-ECST logo

In 2020, the IAPG established the **Early Career Scientists Team (ECST)** (<https://www.geoethics.org/ecst>), replacing the **Young Scientists Club (YSC)** that was active from 2015 to 2019. The ECST has the following goals:

1. Promoting geoethics and the IAPG, with a special target focused on younger and early career scientists/professionals;
2. Working as the interface between IAPG and young/early career scientists' organizations and groups.
3. Starting to self-train a group of geoscientists that would be able to bring the reins of the IAPG into the future and able to continue to develop geoethical thinking, by following multi and transdisciplinary approaches.

The IAPG considers the ECST as its outpost and one of its greater strengths. The IAPG believes that early career and young scientists can indicate needs and expectations on the future of geosciences. They can help to give a perspective that is updated and adheres to the new challenges that geoscientists have to face. They can also report new instances from society, identifying the potential innovative contributions that geosciences can provide to society.

The 8 members of the ECST Board are early career scientists/professionals and members of the IAPG: **Daniel DeMiguel**, Spain (Spokeperson); **Ndivhuwo Cecilia Mukosi**, South Africa; **Cristina Toma**, Romania; **Sebastian Handl**, Austria; **César Oboni**, Canada; **Bárbara Zambelli**, Brazil; **Alexandra Cardoso**, Portugal; and **Jonathan Rizzi**, Italy/Norway.

On 4 June 2020, **Vitor Correia** (Portugal) was appointed **IAPG Delegate** for Relationships with European Organizations (<https://www.geoethics.org/delegates>). Delegates are IAPG key-officers, whose aim is to create opportunities for the IAPG in order to facilitate, in specific contexts, projects, initiatives, activities, agreements with other organizations that have the development and promotion of geoethics as their main focus.

On 8 May 2017, the IAPG nominated the **Task Group on Responsible Mining – TGRM** (<https://www.geoethics.org/tgrm>), formed by Nikolaos Arvanitidis (Sweden), Jan Boon (Canada), Pekka Nurmi (Finland), and Giuseppe Di Capua (Italy). The goal of the Task Group has been to draft a document on “Responsible Mining”, on values and concepts that should be considered in mining, including their importance for future generations in the perspective of a sustainable

development of our societies. On 1st December 2017, the IAPG Executive Council approved the “White Paper on Responsible Mining” (<https://www.geoethics.org/wp-responsible-mining>), prepared by the Task Group following a review by an International Panel of Experts comprising Vitor Correia (Portugal), Roberto Lencina (Argentina), David Ovadia (United Kingdom), Mark Rachovides (Canada), and Ian Thomson (Canada). Unfortunately in 2020 Jan Boon, one of the members of the Task Group and co-author of the White Paper, passed away. Moreover another member, Pekka Nurmi, decided to leave the Task Group after his retirement. On 22 December 2020, the TGRM was renewed and 6 members were appointed: **Marita Ahumada** (Argentina); **Estelle Levin-Nally** (United Kingdom); **Vitor Correia** (Portugal); **Roberto Lencina** (Argentina); **Nikolaos Arvanitidis** (Sweden); and **Giuseppe Di Capua** (Italy).

On 26 October 2020, the IAPG has established the **Task Group on Geoethics and Geoheritage - TGGG** (<https://www.geoethics.org/tggg>), comprising 4 members: **José Brilha** (Portugal); **David W. Mogk** (USA); **Silvia Peppoloni** (Italy); and **Giuseppe Di Capua** (Italy). The goal of the Task Group is to draft a document on “Geoethics and Geoheritage”, focused on values and concepts to be considered within the geoscience community and society as a whole, related to geoheritage, geodiversity, geoparks, and geotourism, according to principles of responsibility and dignity, in the perspective of responsible development and nature conservation.

On 5 October 2018, the IAPG, jointly with the IFG – Initiative on Forensic Geology of the IUGS, and established the **Task Group on Geoethics in Forensic Geology - TGGFG** (<https://www.geoethics.org/tggfg>), comprising 3 members: **Lorna Dawson** (United Kingdom); **Silvia Peppoloni** (Italy); and **Rosa Maria Di Maggio** (Italy). The goal of the Task Group is to draft a White Paper on “Geoethics in Forensic Geology”, in order to define ethical values in the applications and best practices of Forensic Geology across the world.

On 21 June 2021, the IAPG has established the **Task Group on Responsible Speleology - TGRS** (<https://www.geoethics.org/tgrs>), currently comprising 3 members: **Mike Buchanan** (United Kingdom); **Oana T. Moldovan** (Romania); and **Aleksandar Antić** (Serbia). Carolyn Ramsey (Canada) resigned from the initial team. The TGRS was formed to present a defined way forward, by drafting an essential White Paper on Responsible Speleology that will provide guidance to the global speleological community, including those who conduct research within caves and on host karst systems.

On 20 July 2019, the **School on Geoethics and Natural Issues** (named “Schola”: <https://www.geoethics.org/geoethics-school>) was officially founded by **Peter Bobrowsky** (Canada), **Giuseppe Di Capua** (Italy), and **Silvia Peppoloni** (Director of the “Schola”, Italy), with the aim to provide excellent education in geoethics.

From 1 January 2021, the IAPG supports the **Journal of Geoethics and Social Geosciences (JGSG)**, a new international scientific journal founded by the Istituto Nazionale di Geofisica e Vulcanologia (National Institute of Geophysics and Volcanology, Rome, Italy). The editor-in-chief is Silvia Peppoloni (IAPG Secretary General). The journal will be operative from 2022.

6. Interaction with other International organizations and projects

The IAPG cooperates with the following organizations (<https://www.geoethics.org/links>):

- African Association of Women in Geosciences (AAWG);
- African Geoparks Network (AGN);
- African Network for Geo-Education (ANGE);
- American Geophysical Union (AGU);
- American Geosciences Institute (AGI);
- Associação Portuguesa de Geólogos (APG);
- Association of Environmental & Engineering Geologists (AEG);
- Berufsverband Deutscher Geowissenschaftler e.V. (BDG);
- Canadian Federation of Earth Sciences (CFES);
- EuroGeoSurveys (EGS);
- European Association for the Conservation of Geological Heritage (ProGEO);
- European Federation of Geologists (EFG);
- European Geosciences Union (EGU);
- Forum for Climate Engineering Assessment (FCEA);
- GS Af - Geological Society of Africa (GS Af)
- Geological Society of America (GSA);
- Geological Society of Chile (SGCh-Sociedad Geológica de Chile)
- Geological Society of London (GSL);
- Geological Society of Peru (SGP-Sociedad Geológica del Perú);

- Geology for Global Development (GfGD);
- Geology in the Public Interest (GPI);
- Geoscience Information in Africa - Network (GIRAF);
- Geoscientists Canada/Géoscientifiques Canada (GC);
- GEVAS Red Argentina;
- Global Geoscience Professionalism Task Group (IUGS-TGGGP);
- Initiative on Forensic Geology of the IUGS (IUGS-IFG).
- Instituto de Geociencias Y Medio Ambiente, Arequipa-Perù (I-GEMA);
- International Association for Engineering Geology and the Environment (IAEG);
- International Association for Geoscience Diversity (IAGD);
- International Association of Geomorphologists (IAG/AIG);
- International Association of Hydrogeologists (IAH);
- International Council for Philosophy and Human Sciences (CIPSH);
- International Geoscience Education Organisation (IGEO);
- International River Foundation (IRF);
- International Union of Geological Sciences (IUGS);
- International Year of Global Understanding (IYGU).
- Italian Geological Society (SGI-Società Geologica Italiana);
- Resources for Future Generations Conference (RFG 2018);
- Science Education Resource Center (SERC);
- South Asian Association of Women Geoscientists (SAAWG);
- The Turkish Chamber of Geological Engineers (JMO-Jeoloji Mühendisleri Odası);
- The National and Kapodistrian University of Athens - Applied Philosophy Research Laboratory (NKUA-APRL);
- Turkish Association of Economic Geologists (MJD-Maden Jeologları Derneği)
- Young Earth-Scientists (YES) Network;
- World Conferences on Research Integrity (WCRI).

The IAPG is involved in the following international projects:

- **ERG** - Educational Resources on Geoethics: IAPG is partner of the project. This project will start in 2022.

- **GOAL** - Geoethics Outcomes and Awareness Learning: IAPG was a partner of the project (website: <https://goal-erasmus.eu/>). This project ended in 2020.
- **INTERMIN** - International Network of Raw Materials Training Centres: IAPG was a member of the International Advisory Board of the project (website: <http://interminproject.org/>). This project ended in 2021.

The IAPG did not receive funds from the ERG and GOAL projects. The IAPG representative in the project INTERMIN received only a reimbursement for participation in the project meetings.

7. Chief products

SCHOOL ON GEOETHICS AND NATURAL ISSUES

The School on Geoethics (the “Schola”) was founded on **20 July 2019**. The founding members are Peter Bobrowsky, Giuseppe Di Capua, and Silvia Peppoloni (Director of the “Schola”). The “Schola” is a place for teaching and learning of the principles and values of geoethics in the light of the philosophy and history of Earth sciences. The intent is to provide background knowledge and the evaluation skills necessary to understand the complex relationship between human action on ecosystems and the decisions geoscientists make in the discipline that impact society, including improving the awareness of professionals, students, decision-makers, media operators, and the public on an accountable and ecologically sustainable development. The “Schola” aims to provide excellent education in geoethics, thus promoting the development of a scientific and critical attitude to the knowledge of the Earth and its constituent systems, by fostering a growth of awareness and responsibility towards the planet, education in the values and actions underlying a respect for ecosystems, including responsible use of resources, management of natural risks, reduction of pollution and its repercussions on human health and climate, adaptation to environmental changes, in view of an accountable and ecologically sustainable development. More information and online educational resources are available at <https://www.geoethics.org/geoethics-school>.

SPRINGERBRIEFS SERIES IN GEOETHICS

SpringerBriefs in Geoethics (<https://www.geoethics.org/springerbriefts-geoethics>) was launched on **14 June 2019**. It envisions a series of publications that aim to discuss ethical, social, and cultural implications of geosciences knowledge, education, research, practice and communication. The intention is to present concise summaries of cutting-edge theoretical aspects, research, practical

applications, and case-studies across a wide spectrum. SpringerBriefs in Geoethics are seen as complementing monographs and journal articles, or developing innovative perspectives with compact volumes of 50 to 125 pages in length, covering a wide range of contents on geoethics. This Series in Geoethics was initiated and supervised by Silvia Peppoloni (editor-in-chief, Italy) and an editorial board consisting of Nic Bilham (United Kingdom), Peter Bobrowsky (Canada), Vincent S. Cronin (USA), Giuseppe Di Capua (Italy), Rika Preiser (South Africa), Artur Agostinho de Abreu e Sá (Portugal), and Iain Stewart (United Kingdom).

BOOKS AND SPECIAL ISSUES

- Book: Di Capua G., Bobrowsky P.T., Kieffer S.W., and Palinkas C., Eds. (2021). ***Geoethics: Status and Future Perspectives***. Geological Society, London, Special Publication, 508, p. VIII+311, ISBN 978-1786205384. doi:10.1144/SP508. <https://sp.lyellcollection.org/content/508/1/NP>.
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- Book: Peppoloni S. e Di Capua G. (2021). ***Geoetica: Manifesto per un'Etica della Responsabilità verso la Terra***. Prefazione di Telmo Pievani. Saggine, n. 346, p. 224, Donzelli Editore, ISBN 978-8855221696. <https://www.donzelli.it/libro/9788855221696>.
- Book: Abrunhosa M., Chambel A., Peppoloni S., and Chaminé H.I., Eds. (2021). ***Advances in Geoethics and Groundwater Management: Theory and Practice for a Sustainable Development - Proceedings of the 1st Congress on Geoethics and Groundwater Management (GEOETH&GWM'20), Porto, Portugal 2020***. Springer International Publishing, p. XXXI+715. ISBN 978-3030593193. doi:10.1007/978-3-030-59320-9. <https://www.springer.com/gp/book/9783030593193>.
- Book: Peppoloni S. (2021). ***Pianeta Terra***. ReWriters MagBook. <https://shop.rewriters.it/product/rewriters-05-2021-pianeta-terra/>.
- Special volume: Chaminé H.I., Abrunhosa M., Barbieri M., Naves A., Errami E., Aragão A. and Di Capua G., Eds. (2021). ***Hydrogeoethics in Sustainable Water Resources Management Facing Water Scarcity in Mediterranean and Surrounding Regions***. Mediterranean Geoscience Reviews, Volume 3, issue 3, <https://link.springer.com/journal/42990/volumes-and-issues/3-3>.

- Book: Joel C. Gill and Martin Smith, Eds. (2021). *Geosciences and the Sustainable Development Goals*. Springer, p. XXXIII+474, ISBN 978-3030388140. doi:10.1007/978-3-030-38815-7. <https://link.springer.com/book/10.1007%2F978-3-030-38815-7>.
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- Book: Boon J. (2020) *Relationships and the Course of Social Events During Mineral Exploration - An Applied Sociology Approach*. SpringerBriefs in Geoethics, Springer International Publishing, pp. XIX + 125. ISBN 978-3030379254, doi: 10.1007/978-3-030-37926-1.
- Book: Bohle M., Ed. (2019). *Exploring Geoethics: Ethical Implications, Societal Contexts, and Professional Obligations of the Geosciences*. Authors: M. Bohle, S. Peppoloni, G. Di Capua, N. Bilham, E. Marone, R. Preiser. Palgrave Pivot, Cham, XIV + 214 pp., ISBN 978-3-030-12009-2, <https://link.springer.com/book/10.1007/978-3-030-12010-8>.
- Special volume: Peppoloni S., Di Capua G., Bobrowsky P., and Cronin V., Eds. (2017). *Geoethics at the heart of all geoscience*. Annals of Geophysics, Vol 60, Fast Track 7, <http://www.annalsofgeophysics.eu/index.php/annals/issue/view/537>.
- Book: Gundersen L.C., Ed. (2017). *Scientific Integrity and Ethics in the Geosciences*, p. 336, American Geophysical Union, Wiley, ISBN 978-1-119-06778-8, <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1119067782.html>.
- Book: Peppoloni S. and Di Capua G., Eds. (2015). *Geoethics: the Role and Responsibility of Geoscientists*, Geological Society, London, Special Publications, 419, ISBN 978-1-86239-726-2, <http://sp.lyellcollection.org/content/419/1>.
- Book: Wyss M. and Peppoloni S., Eds. (2014). *Geoethics: Ethical Challenges and Case Studies in Earth Sciences*, 450 p. Elsevier <http://store.elsevier.com/Geoethics/isbn-9780127999357/>.
- Book: Lollino G., Arattano M., Giardino M., Oliveira R., and Peppoloni S., Eds. (2014). *Engineering Geology for Society and Territory - Volume 7: Education, Professional Ethics and Public Recognition of Engineering Geology*, XVII, 274 p. 103 illus., 86 illus. in color, Springer <http://www.springer.com/earth+sciences+and+geography/environmental+science+%26+engineering/book/978-3-319-09302-4>.

- Special volume: Peppoloni S. and Di Capua G., Eds. (2012). *Geoethics and geological culture. Reflections from the Geoitalia Conference 2011*, Annals of Geophysics, Vol. 55, No 3. <http://www.annalsofgeophysics.eu/index.php/annals/issue/view/482>.

REFERENCE DOCUMENTS

- **Cape Town Statement on Geoethics:** <https://www.geoethics.org/ctsg>.

Supported by 27 geoscience organizations (International Union of Geological Sciences - IUGS, European Federation of Geologists - EFG, International Association of Geomorphologists - IAG/AIG, African Association of Women in Geosciences - AAWG, Geological Society of Africa – GSAf, Young Earth Scientists Network - YES Network, International Geoscience Education Organisation - IGEO, Geology in the Public Interest - GPI, International Association for Geoscience Diversity - IAGD, EuroGeoSurveys - EGS, American Geophysical Union - AGU, American Geosciences Institute - AGI, Geological Society of America - GSA, Società Geologica Italiana-Italian Geological Society - SGI, Berufsverband Deutscher Geowissenschaftler e.V. – BDG, Sociedad Geológica del Perú-Geological Society of Peru - SGP, Instituto Geológico, Minero y Metalúrgico, Peru - INGEMMET, International Association of Hydrogeologists - IAH, Sociedad Geológica de Chile-Geological Society of Chile – SGCh, Turkish Association of Economic Geologists-Maden Jeologları Derneği – MJD, The Turkish Chamber of Geological Engineers-Jeoloji Mühendisleri Odası (JMO), Geology for Global Development - GfGD, International Association for Engineering Geology and the Environment - IAEG, Associação Portuguesa de Geólogos-Portuguese Association of Geologists – APG, South Asian Association of Women Geoscientists - SAAWG, Instituto de Geociencias Y Medio Ambiente, Arequipa-Perù - I-GEMA, and African Network for Geo-Education – ANGE.

Available in 35 languages: Afrikaans, Albanian, Arabic, Armenian, Belarusian, Bengali, Czech, Danish, Dutch, English, French, Georgian, German, Greek, Hindi, Hungarian, Italian, Japanese, Korean, Mandarin Chinese, Nepali, Norwegian, Persian, Portuguese, Romanian, Russian, Sepedi, Serbian, Slovenian, Spanish, Swahili, Tamil, Turkish, Ukrainian, and Urdu.

- **Geoethical Promise:** <https://www.geoethics.org/geopromise>.

Supported by 27 geoscience organizations and available in 35 languages (see above).

- **White Paper on Responsible Mining:** <https://www.geoethics.org/wp-responsible-mining>.

Available in 3 languages: English, Greek, and Swedish.

INTERNATIONAL SURVEY ON GEOETHICS: ONLINE QUESTIONNAIRE

International survey geoscience, partially funded by the IUGS – International Union of Geological Sciences, on the community's perception and awareness on the importance of the ethical and social aspects of geoscience research and practice. The questionnaire covers the following topics: Research integrity and professionalism in conducting geoscience activities; Respect towards colleagues and appropriate behaviours in the working environment; Conflicts of interest; Awareness of geoscientists' responsibilities towards society in the dissemination of scientific results, in geoscience communication and geo-education activities; Roles and responsibilities of geoscientists in the decision-making process; Relationship between the geoscience community and stakeholders; Responsibilities of geoscientists towards the Earth system.

413 questionnaires were received by 31 December 2020.

Link: <https://form.jotformeu.com/93223788145362>.

VIDEOS, INTERVIEWS AND ARTICLES FOR NEWSPAPERS AND MAGAZINES

- 38 videos uploaded on the YouTube channel of the IAPG:
<https://www.youtube.com/user/iapgeoethics/videos>
- Articles on geoethical issues for the Italian newspapers “Corriere della Sera” and “Il Sole24Ore”, for the Italian Magazines “112 Emergencies” and “MicroMega, La Mela di Newton”, and for the blog “Storie di Gea” (by Silvia Peppoloni, IAPG Secretary General);
- Article on geoethics for the online magazine “Human Futures” (by Martin Bohle, Silvia Peppoloni, Eduardo Marone, IAPG officers);
- 7 radio and video interviews with the IAPG President, Secretary General and IAPG members for the:
 - Minigeology, subject “Geoethics: interview to Peter Bobrowsky”, by Daniel Minisini:
<https://youtu.be/jf4RM8YGa8Y>;
 - Swiss Radio Network 2, subject: “Prevention and Geoethics”, by Matteo Martelli;
 - Austrian Radio (ORF1) program on Geoethics: “Dimensionen - die Welt der Wissenschaft: Was soll ich tun - global gesehen? Die Ethik in den Geowissenschaften” (“Dimensions - the world of science: What should I do - a global perspective? The Ethics in the geosciences”), by Wolfgang Däuble: <http://oe1.orf.at/programm/404157>;
 - German Radio (SWR2), title “Endgültig freigesprochen: Das Erdbeben von L’Aquila und die ethische Verantwortung der Geowissenschaftler. Gespräch mit Silvia Peppoloni, International Association for Promoting Geoethics, Rom. (Finally acquitted: The L’Aquila earthquake and

the ethical responsibility of geoscientists. Interview with Silvia Peppoloni, International Association for Promoting Geoethics, Rome). Redaktion / Moderation: Gabor Paal;

- Italian Radio Television Network (RAI), subject: culture of prevention. The interview begins from minute 16:30: <http://www.raiscuola.rai.it/articoli/nautilus-seguendo-il-tempo/26025/default.aspx>;

- Italian Radio Television Network (RAI), Radio3 Scienza, subject: Natural risks;

- Science Festival in Genoa (Italy):

Part 1 https://www.youtube.com/watch?v=Xt0_Z6mAGeI&list=UUP-Fngse1pu9sFvyBgN3AzQ

Part 2 <https://www.youtube.com/watch?v=M2aYspo0p5Y&feature=youtu.be>.

Many scientific PAPERS/CHAPTERS on geoethics have been included in the books mentioned above. About 260 papers/chapters on geoethics (with a peer-review process) have been published since 2012.

ORAL AND POSTER PRESENTATIONS in scientific sessions, courses, meetings: EGU General Assembly (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021), IGC – International Geological Congress (2012, 2016), Geoethics & Groundwater Management Congress in Porto (2020), 1st International (Virtual) Symposium on Geoethics (2020), Congress of the Italian Geological Society (2016, 2018), Geotalia conference (2013), IAEG Congress (2014), GSA Annual Meeting (2014, 2015), AGU Fall Meeting (2014, 2015, 2016, 2017, 2018), CIPSH Humanities Seminar (2021), Bolivian Geological Congress (2021), Symposium of the Geology of Chile (2021), CIPSH European Humanities Conference (2021), Resources for Future Generations Conference – RFG (2018), WCRI (2013, 2015), AGU-GAC-MAC-CGU Joint Assembly (2015), AGU Geoscience and Society Summit (2019), International Congress of the Geological Society of Greece (2019), Argentine Geological Congress (2017), Geological Congress of Spain (2016), Peruvian Congress of Geology (2016), CAAWG - Conference of the African Association of Women in Geosciences (2016, 2018), Nigeria Geoethics Conference (2018), Simposio de Paleontologia del Perú (2018), Jornadas Científicas sobre Geología del Paraguay y Ciencias Afines (2018), EADI NORDIC Conference (2017), GeoSciEd (2018), EnsinoGEO (2018), General Assembly of the European Seismological Commission – ESC (2018), GeoKarlsruhe (2021), PGO – Professional Geoscientists Ontario Virtual Symposium (2020, 2021), GfGD Annual Conference (2018), Earth System Governance Conference (2018), AAAS meeting (2019), Geoconvention, Canada (2019), EFG Workshop (2014), 6th Meggen Raw material days (2020), EFG-UNECE

Conference (2017), Foro Internacional sobre Gestión del Riesgo Geológico - International Forum on Geological Risks Management (2015), Future Earth international symposium in Japan (2017), International Conference of the Institute of African Research and Studies – IARS in Egypt (2016), Colloquium on Geoethics in Peru (2015), Conference of the African Association of Women in Geosciences Nigeria (2015), OTC Conference in Houston (2014), SERC workshop in Montana (2014), AEG course in Texas (2014), Geological Society of London, Regional Group – Lecture (2017), CNG course in Italy (2014), Science Festival in Genoa, Italy (2013, 2014), Bioethics Festival, Italy (2019), Mercator Research Institute on Global Commons and Climate Change – MCC meeting (2019), Meeting: nANO meets water VII meeting in Germany (2016), South Texas Geological Society meeting (2016), Ocean Sciences Meeting – OSM (2016, 2018), 45th IAH Congress (2018), CoV-9: Cities on Volcanoes in Chile (2016, 2018), Workshop on Geoethics in Nigeria (2016), XV Chilean Geological Congress (2018), Colombian Conference of Geology (2015), International Conference of Underground Construction (2015), Geological Conference of Central America (2015), Salzburg Global Seminar (2018), FORAM 18 pilot event on raw materials governance (2018), National Congress of the Italian Environment Fund – FAI (2017), GOAL workshop/meeting (2018, 2019, 2020), INTERMIN Meeting (2018, 2019), and WISE Multiplier Event (2017).

MINERLIMA

International Exhibition of Minerals (Feria Internacional de Minerales) in Peru, conceived and organized by IAPG-Peru from 2015, in cooperation with numerous Peruvian organizations and institutions. Events planned: short courses, conferences and workshops (for children and the general public), showcase (exhibition-sale of mineral samples), geological excursions and guided tours. In 2021, the 7th edition was held.

Website: <https://minerlima.wixsite.com/minerlima>

WEBSITE AND SOCIAL NETWORKS

- **Official Website:** <https://www.geoethics.org>
- **Blog:** <http://iapgeoethics.blogspot.com>
- **Linkedin Group** “Geoethics and Culture of Geosciences” (2927 members):
<https://www.linkedin.com/groups/4615518>
- **Facebook Page:** <https://www.facebook.com/iapg.geoethics/> (8479 followers)

- **Twitter Page** (@IAPGeoethics): <https://twitter.com/IAPGeoethics> (3102 followers)
- **YouTube channel**: <https://www.youtube.com/user/iapgeoethics/videos> (147 registered followers)
- **Photo gallery on Flickr**: <https://www.flickr.com/photos/125283529@N05/sets/>
- Other IAPG national sections webpages at: <https://www.geoethics.org/sections.html>

Since 2012, thousands of posts have been published on the IAPG website, blog, and social networks regarding articles, news, call for abstracts, meetings-conferences, seminars, events and other kinds of information on geoethics.

WEBINAR AND VIDEO-LECTURES/SEMINARS

- Webinar: 4th Round Table in Peru, entitled “**On geoethics in Peru: Towards the development of geoethical policies**”, organized by IAPG-Peru: <https://www.youtube.com/watch?v=Z1OQPPWAeuo> (Peru, 18 December 2021).
- Invited-Speech on **geoethics** by Vince Cronin (IAPG-USA Co-coordinator) at the “International Workshop on Geoethics with focus on Geohazards and Mining Disasters”, organized by IAPG-India and NIDM - National Institute of Disaster Management: <https://www.youtube.com/watch?v=gPIyNf8RNzM> (India, 14 October 2021).
- Video-Lecture by Giuseppe Di Capua (IAPG Treasurer), entitled “**Geoethics: from an ethics for geosciences to a global ethics for societies**”, organized by the GeoZS - Geological Survey of Slovenia for its 75th anniversary: <https://www.youtube.com/watch?v=V3TiXhVQKiE> (Slovenia, 17 November 2021).
- Short Video Course on Geoethics at the EGU General Assembly 2021, organized by the IAPG:
 0. **Forewords to Honour Jan Boon** (Giuseppe Di Capua): <https://www.youtube.com/watch?v=piQv21HI5so>.
 1. **Theoretical foundations of Geoethics** (Silvia Peppoloni): <https://www.youtube.com/watch?v=Rz5yHyHjzEw>.
 2. **Responsible conduct of research and professionalism** (David Mogk): https://www.youtube.com/watch?v=RZmUEyR_Ri8.
 3. **Development Perspectives for Geoethical Thoughts?** (Martin Bohle): <https://www.youtube.com/watch?v=EcCnxHbIYt0>.

4. **Education for Confronting (geo)ethical dilemmas** (Eduardo Marone): <https://www.youtube.com/watch?v=r5NIHyjZX4>.
 5. **Geoethics and responsible mining** (Nic Bilham): <https://www.youtube.com/watch?v=Z-EuWoe-CGs>.
 6. **Geoethics in natural hazards from the perspective of an engineering geologist** (Vince Cronin): <https://www.youtube.com/watch?v=xhyXb6WxyOw>.
 7. **Geoethics' case studies: Paleontology and Geoheritage** (Daniel DeMiguel): <https://www.youtube.com/watch?v=fj3tkjPKqt0>.
 8. **Geoethics' case studies: effects of the EU directive on conflict minerals** (Vítor Correia): <https://www.youtube.com/watch?v=16K0cG7c-h8>.
- Webinar by Silvia Peppoloni (IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer) entitled “**Introduzione alla Geoetica**” (Introduction to Geoethics) at the MUST – Department of Earth sciences of the Sapienza University of Rome: <https://www.youtube.com/watch?v=QwYsDGJRS7E> (Italy, 3 March 2021).
 - Video-Lecture by John Geissman (Geoethics Medalist 2020), entitled “**Geoethics - Integrity and Ethics in Science in Higher Education**”, at the University of Potsdam (Germany): <https://youtu.be/GANbLvJ6bms> (Germany, 4 January 2021).
 - Invited-Talk by Daniel DeMiguel (IAPG-ECST Spokeperson), entitled “**Geoethical issues in Palaeontology at a glance**”, at the Virtual Workshop "Palaeoethics from the Field, to the Museum, and to Publication", organized by The Palaeontological Association and hosted by the Oxford University Museum of Natural History (United Kingdom, 15 December 2020).
 - Online-Talk by Luisa Pinto Lincoñir (IAPG-Chile coordinator), entitled “**Geosciences, Professional Ethics, and Sustainability**”, at the University of Chile: <https://youtu.be/XRNMFkK1wBE> (Chile, 9 December 2020).
 - Invited-Speech by Silvia Peppoloni (IAPG Secretary General), entitled “**A White paper on Ethics in Forensic Geology**”, at the one day (virtual) meeting on “Forensic Geophysics and Geology”, organized by the Geological Society of London (2 December).
 - Invited-Speech by Silvia Peppoloni (IAPG Secretary General), entitled “**Pandemic and Social Inequalities**”, to celebrate the World Philosophy Day of UNESCO: <https://youtu.be/81XL4eBFizY?list=PLWuYED1WVJIOyGKNfOeS9fXTPcxyVmEKm> (20 November 2020).

- Webinar on **Geoethics** organized by the Early Career Scientists Team (ECST) of the IAPG to celebrate the International Geoethics Day 2020. Speakers: officers of the IAPG and members of the ECST: <https://youtu.be/QV-qgAJPAAQ> (19 October 2020).
- Online-Talk by Francesc Bellaubi (IAPG member) entitled “**The role of Geoethics in georesources management and governance: some case studies**” at the ZEF – Center for Development Research, University of Bonn (Germany, 8 October 2020).
- Online-Seminar by Martin Bohle (IAPG Board of Experts) entitled “**Foundations & Examples for how to tackle (Geo)ethical Dilemmas**” at the Ronin Institute (USA, 16 September 2020).
- Invited Talk by Giuseppe Di Capua (IAPG Treasurer) entitled “**Geoethics - Why bother?**” at the Virtual Symposium "Exploring the Convergence of Professional Geoscience, Public Policy, Regulatory Requirements, Standards and Protection of the Public", organized by PGO - Professional Geoscientists Ontario (Canada, 7 July 2020).
- Online-Seminar by Silvia Peppoloni (IAPG Secretary General) entitled “**Geoethics and Georisks: definitions, concepts and values**”, organized by Ezzoura Errami (Dean Faculté Polydisciplinaire de Safi, Morocco, President of the AAWG – African Association of Women in Geosciences, and IAPG Continental Coordinator for Africa) (Morocco, 7 July 2020).
- Invited Talks by Giuseppe Di Capua (IAPG Treasurer) and Silvia Peppoloni (IAPG Secretary General) entitled respectively “**Promoting Geoethics worldwide: the IAPG network**” and “**From Ethics to Geoethics: definitions, values, and tools**”, organized by Surya Parkash (IAPG-India Coordinator) at the School of Earth and Environmental Science, Amity University Haryana (India, 14 June 2020).
- Opening Speech by Manuel Abrunhosa (IAPG Board of Experts) of the Geoethics & Groundwater Management (Virtual) Congress, co-organized by IAPG and IAH – International Association of Hydrogeologists: <https://youtu.be/oun00bG-ABE> (Portugal, 18 May 2020).
- Invited Speech by Silvia Peppoloni (IAPG Secretary General) for the Opening Ceremony of the Geoethics & Groundwater Management (Virtual) Congress, co-organized by IAPG and IAH – International Association of Hydrogeologists: <https://youtu.be/uyLpdTBJk98> (Portugal, 18 May 2020).
- Online-Keynote by Silvia Peppoloni (IAPG Secretary General) entitled “**Geoscientists as social and political actors**” at the Union Symposium 1 (US1) - EGU 2020: Sharing Geoscience Online: <https://www.youtube.com/watch?v=KYH9MNMQs3c> (from minute 37:23) (4 May 2020);

- Video-Pills developed by the European project “GOAL – Geoethics Outcomes and Awareness Learning”, in cooperation with the IAPG:
 - “**Introduction to geoethics: definition, concepts, and application**” (by Silvia Peppoloni, IAPG Secretary General): <https://youtu.be/NX7Gii5adKk> (March 2019);
 - “**Geoethics and responsible use of geo-resources**” (by Giuseppe Di Capua, IAPG Treasurer): <https://youtu.be/23nwwu79sSA> (July 2019);
 - “**Geoethical Issues and Geoethical Dilemmas**” (by Silvia Peppoloni, IAPG Secretary General): <https://youtu.be/gZ8Y56-yrDM> (August 2019);
 - “**Geoethics and Geological Risks**” (by Silvia Peppoloni, IAPG Secretary General): <https://youtu.be/rZSjzOxiGUK> (December 2019).
- Video-Lesson by Stefano Tinti (IAPG President) on “**Geoethical issues in prediction and prevention of potentially catastrophic natural events**” at the workshop organized by the AAAS - American Association for the Advancement of Science, entitled: “Acutely Ethical: Principles and Guidelines on the Use of Location-Based Data in Crisis Situations”: <https://youtu.be/aHdZBp0cJbc> (March 2019).
- Video-Lesson by Silvia Peppoloni (IAPG Secretary General) entitled “**Geoethics in Disaster Risk Reduction**” in the online course (MOOC): “A Resilient Future: Science and Technology for Disaster Risk Reduction” (Discover how science and technology help us reduce disaster risk and increase resilience): <https://www.youtube.com/watch?v=jCVkuaKAqK8&t=43s>. This online course has been organized by the École Polytechnique Fédérale de Lausanne (Switzerland). The video is included in the Chapter 7: Science and Technology for Resilience and Sustainable Development - Ethics in Disaster Risk Reduction.
- Webinar by David Mogk (IAPG Board of Experts) entitled “**Professionalism and Geoethics: Creating a Workplace Environment Where Everyone Can Succeed**” for the GOLI – Geoscience Online Learning Initiative by AGI – American Geosciences Institute: <https://goli.americangeosciences.org/courses/course-v1:AIPG+AIPG009+2018/about> (June 2018).
- Video-Lecture on “**Geoethics and Georisks Reduction**” at the conference organized by the Italian Embassy in Norway, in collaboration with the University of Oslo, in the framework of the initiative “Under the Sign of Excellence”.
- Video-Lecture “**Geoethics and the IAPG network**” at the First National Conference of the African Association of Women in Geosciences Nigeria - AAWGN, June 2015): <https://www.youtube.com/watch?v=f-ki8cwP8bk>.

- Organization of a webinar on Geoethics at the EGU General Assembly 2013: http://www.egu2013.eu/nh9_8_video.html. In collaboration with YES-Network and AGI – American Geological Institute.

NEWSLETTER

IAPG has released its Newsletter since May 2015.

30 issues have been published and are available at: <https://www.geoethics.org/newsletter.html>.

INTERNATIONAL EVENTS

International Geoethics Day. Officially launched in 2017, is held every year during the Earth Science Week: <https://www.geoethics.org/geoethics-day>. On 14 October 2021, the IAPG community celebrated the 5th anniversary, entitled “*Geoethics enhances the value of Geodiversity*”. On 15 October 2020, the IAPG community celebrated the 4th anniversary, entitled “*Make a... Geoethical Promise*”, and the IAPG-ECST organized a webinar on 19 October 2020: <https://youtu.be/QV-qgAJPAAQ>. The 1st event was celebrated on 12 October 2017 (entitled: “*Take your photo*”), the 2nd event on 18 October 2018 (entitled: “*Geoethics is.....*”), and the 3rd event on 17 October 2019 (entitled “*Seed Today... for the future*”).

AWARDS

Geoethics Medal was conceived in April 2016 during the IAPG Council Meeting held during the EGU General Assembly in Vienna, and unanimously approved by the first IAPG General Assembly held during the 35th IGC – International Geological Congress in Cape Town, on 31 August 2016. The Geoethics Medal is bestowed annually. The first edition of the Geoethics Medal (2018) was launched on 18 October 2017, during the Global Ethics Day 2017 of the Carnegie Council for Ethics in International Affairs: <http://www.geoethics.org/geoethics-medal>. The Geoethics Medal 2021 was awarded to Sandra Villacorta (Charles Darwin University) and Iain Hay (Flinders University, emeritus) in November 2020. The Geoethics Medal 2020 went to John Geissman (University of Texas at Dallas) in October 2020. The Geoethics Medal 2019 went to Linda C. Gundersen (U.S. Geological Survey, retired) in July 2019. The Geoethics Medal 2018 went to Chris King (IUGS-COGE and EGU Committee on Education) in September 2018.

8. Chief accomplishments 2021 and plans for 2022

CHIEF ACCOMPLISHMENTS 2021

January 2021

- John Geissman, Professor of Geosciences, University of Texas at Dallas, and 2020 Geoethics medalist gave a keynote lecture on geoethics at the Potsdam University in the Institute of Geoscience colloquium series. Video: <https://www.youtube.com/watch?v=GANbLvJ6bms> (4 January).
- Publication of the call for abstracts for the session EOS4.2 “Geoethics: Geosciences serving Society” at the vEGU21 (7 January).
- The Union of Chambers of Turkish Engineers and Architects (TMMOB) - Chamber of Geological Engineers (JMO) - Jeoloji Mühendisleri Odası and IAPG signed an Agreement for Cooperation (12 January 2021).
- IAPG celebrated the World Logic Day 2021 of UNESCO: Letter by IAPG to support the World Logic Day 2021 (http://wld.cipsh.international/support/IAPG_WLD2021.pdf) (14 January).
- New article published in the IAPG Blog: “Nuclear weapons banned from today: welcome to the era of responsibility (but also of uncertainty)” by Silvia Peppoloni (Italy) (<http://www.geoethics.org/articles-from-iapg-blog>) (24 January).
- IAPG joined as a media partner of the Lecture Series, organized by UNESCO in collaboration with IUGS and iCRAG: <https://www.icrag-centre.org/news-and-media/conferences-and-events/earthmaterialssustainability.html> (26 January – 9 March).
- IAPG Annual Report 2020 (“Chief Accomplishments 2020 and Plans 2021”) for the IUGS released on the IAPG website: <https://www.geoethics.org/annual-reports> (27 January).

February 2021

- New article published in the IAPG Blog: “eGeos: Bringing Our Talents to the Emerging Energy Economy” by Rachelle Kernen, Australia and Edith Newton Wilson (USA) (<http://www.geoethics.org/articles-from-iapg-blog>) (2 February).
- Talk on geoethics by Martin Bohle (IAPG Board of Experts) at the University of Heidelberg (Geokolloquium), entitled “Geoethics – for Society, Geosciences and Geoscientists” (3 February).

- New book: *Peppoloni S. and Di Capua G. (2021). GEOETICA: manifesto per un'etica della responsabilità verso la Terra. Prefazione di Telmo Pievani. Saggine, n. 346, pp. 224, Donzelli Editore, ISBN 978-8855221696. <https://www.donzelli.it/libro/9788855221696>. Title in English (GEOETHICS: manifesto for an ethics of responsibility towards the Earth) (4 February).*
- Webinar “Geoethics and Georesources” at the Aachen University (Germany). Speakers: a) David Mogk (Montana State University, USA; IAPG Board of Experts), title of presentation: “From geoscience professional development to responsible citizenship”; b) Nic Bilham (Camborne School of Mines, United Kingdom; IAPG Continental Coordinator for Europe), title of presentation: “Geoethics as a framework for responsible production and consumption of mineral resources: roles for geoscientists, stakeholders and citizens” (11 February).
- Peter Bobrowsky (IAPG Continental Coordinator for North America) informed that the IAPG Annual Report 2020 was distributed to some 90 member representatives of CFES – Canadian Federation of Earth Sciences (11 February).
- IAPG-Turkey informed IAPG that the Union of Chambers of Turkish Engineers and Architects - Chamber of Geological Engineers prepared its Professional Ethics Regulations that was published in the Official Gazette of Turkey. This important document for the Turkish geological community explicitly mentions geoethics and contains many references to geoethical values as expressed in the Cape Town Statement on Geoethics. The Chamber of the Geological Engineers (JMO) of Turkey has a Geoethics Board that is recognized as IAPG-Turkey, and members of the Board are co-coordinators of our national section in Turkey. More: <https://iapgeoethics.blogspot.com/2021/02/geoethics-is-now-included-in.html> (23 February).
- New paper published in the special issue on geoethics of the journal *Sustainability*, edited by Silvia Peppoloni (IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer): *Bohle M. and Marone E. (2021). Geoethics, a Branding for Sustainable Practices. Sustainability, 13(2), 895, <https://doi.org/10.3390/su13020895>* (26 February).
- IAPG-Peru called a contest to choose the slogan for MinerLima2021 (27 February).

March 2021

- New article published in the IAPG Blog: “Geology, Climate Change and New Policy for our Territories benefit” by José Martín Cabello Lechuga (Chile) (<http://www.geoethics.org/articles-from-iapg-blog>) (1 March).

- Publication of the introductory chapter of the book “Geoethics: Status and Future Perspectives”:
Di Capua G., Bobrowsky P.T., Kieffer S.W., Palinkas C. (2020). Introduction: geoethics goes beyond the geoscience profession. In: Di Capua G., Bobrowsky P.T., Kieffer S.W., Palinkas C. (Eds.). Geoethics: Status and Future Perspectives. Special Publications, 508, pp. 1-11, Geological Society of London. <https://doi.org/10.1144/SP508-2020-191> (3 March).
- Webinar (in Italian) entitled “Geoetica” (Geoethics), organized by MUST – Department of Earth Sciences at Sapienza University of Rome. Speakers: Silvia Peppoloni (Coordinator of the Section of Geoethics and Geological Culture of the Italian Geological Society/IAPG-Italy and IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer); Moderator: Prof. Raffaele Sardella (MUST Director) (3 March).
- Publication of the Call for Nominations for the Geoethics Medal 2021 (9 March).
- New article published in the IAPG Blog: “Rediscovering the sense of the human in a chaos of "ceneisms"” by Silvia Peppoloni (Italy) (<http://www.geoethics.org/articles-from-iapg-blog>) (11 March).
- Eduardo Marone (IAPG-Brazil coordinator) gave a talk on geoethics in the webinar organized “in memoriam” of Prof. Carlos Soares and Laura Segura. This event was organized by the International Ocean Institute - América Latina and Caribe and IAPG was partner of the webinar. Video: <https://www.youtube.com/watch?v=Rpq2e2WmaQ> (11 March).
- Giuseppe Di Capua (IAPG Treasurer) gave a speech entitled “Geoethics: strengthening geoscience professionalism and the social role of geoscientists” in a webinar organized by MJD - Maden Jeologları Derneği (Turkish Association of Economic Geologists) (11 March).
- New article (in Italian) published in the online magazine “CiviltàAppennino”: “Geoetica per il territorio - Andare oltre le contrapposizioni” (Geoethics for the territory - Going beyond contrasts), by Silvia Peppoloni (Italy) (<https://www.civiltaappennino.it/2021/03/11/geoetica-per-il-territorio/>) (11 March).
- New article (in Italian) published in the online magazine “CiviltàAppennino”: “Il senso e il valore del territorio” (The meaning and value of the territory), by Giuseppe Di Capua (Italy) (<https://www.civiltaappennino.it/2021/03/15/il-senso-e-il-valore-del-territorio/>) (11 March).
- New coordinator for IAPG-Canada: Paul Hubleby (SRK ES) replaced Shona van Zijl de Jong (25 March).
- Silvia Peppoloni (IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer) gave talks in the webinar entitled “Geoethics: theoretical foundations and its practical applications in the

field of geo-risks and georesources”, organized by University of Chieti - Department of Engineering and Geology, Italy (26 March).

April 2021

- New book: *Abrunhosa M., Chambel A., Peppoloni S., Chaminé H.I., eds. (2021). Advances in Geoethics and Groundwater Management: theory and practice for a sustainable development - Proceedings of the 1st Congress on Geoethics and Groundwater Management (GEOETH&GWM'20), Porto - Portugal 2020. XLV + 523 p., 24 b/w illustrations, 180 illustrations in colour, Springer, ISBN 978-3-030-59319-3. <https://doi.org/10.1007/978-3-030-59320-9> (2 April).*
- Silvia Peppoloni (IAPG Secretary General) held a seminar at the RomaTre University, Italy, entitled “Geoethics and geological culture: definitions, concepts, values, and tools.” (9 April).
- Roberto Greco (IAPG Continental Coordinator for South America), Sandra Villacorta (IAPG-Peru Scientific Coordinator), Carlos Toledo (IAPG-Peru Coordinator) were panelists of the “Tema 4 Geoética” (Theme 4 Geoethics) panel of discussion organized by LAIGEO (International Geoscience Education Organisation - IGEO, Latinoamérica) (9 April).
- IAPG was a supporting organization of the “Promoting Geodiversity Workshop”, hosted by the Oxford University Museum of Natural History, and funded by Research England’s Strategic Priorities Fund allocation to the University of Oxford. (16 April).
- IAPG-Chile/Grupo Geoética Chile (Geoethics Group Chile) and Grupo de Educación (Education Group) of the Sociedad Geológica de Chile (Geological Society of Chile) co-organized a webinar on “Popularization of Geosciences in Chile” (19 April).
- IAPG celebrated the Earth Day 2021: <https://iapgeoethics.blogspot.com/2021/04/international-association-for-promoting.html> (21 April).
- Giuseppe Di Capua (IAPG Treasurer) gave an invited speech entitled “Geoethics in Natural Hazard and Risk Management” at the 2021 Virtual Symposium of the PGO - Professional Geoscientists Ontario, Panel Session B “Risky Business: A Changing Paradigm of Managing Risks in a Changing World”. Paul Hubley (PGO President and IAPG-Canada coordinator) was co-chair of the Panel Session B (22 April).
- New article published in the IAPG Blog: “Process, Procedures, and Proposals: Establishing a UNESCO International Geodiversity Day” by Jack Matthews (United Kingdom) (<http://www.geoethics.org/articles-from-iapg-blog>) (23 April).

- New coordinator for IAPG-Iran: Parviz Armani (Imam Khomeini International University) replaced Nima Nezafati (23 April).
- Publication of the IAPGeoethics Newsletter, issue #1–2021: <http://www.geoethics.org/newsletter> (23 April).
- EGU General Assembly 2021 (Virtual): IAPG Session EOS4.2 “Geoethics: Geosciences serving Society”. Convenership: Silvia Peppoloni and Giuseppe Di Capua. 20 online presentations: https://meetingorganizer.copernicus.org/EGU21/session/40010#vPICO_presentations (26 April).
- EGU General Assembly 2021 (Virtual): Session EOS3.2 “Climate literacy: Learning, education, methods and roadmaps”, co-sponsored by IAPG. Convenership: David Crookall, Giuseppe Di Capua, Lydie Lescarmontier, Robin Matthews, Frank Niepold. 26 online presentations: https://meetingorganizer.copernicus.org/EGU21/session/40027#vPICO_presentations (26 April).
- New book: *Joel C. Gill and Martin Smith, eds. (2021). Geosciences and the Sustainable Development Goals. XXXIII + 474 p., 3 b/w illustrations, 234 illustrations in colour, Springer, ISBN 978-3-030-38814-0. <https://doi.org/10.1007/978-3-030-38815-7>* (28 April).
- IAPG-Italy contributed to the issue 4 of the magazine “Geologicamente” of the Italian Geological Society (SGI). On this magazine there are dedicated pages on geoethics managed by IAPG-Italy (that is also the Section of Geoethics and Geological Culture of the SGI): https://www.socgeol.it/files/download/pubblicazioni/Geologicamente/GEOLOGICAMENTE%2004_DEF.pdf (29 April).
- New article published in the IAPG Blog: “The Ethics of Deep Sea Mining” by David Ovadia (United Kingdom) (<http://www.geoethics.org/articles-from-iapg-blog>) (29 April).
- EGU General Assembly 2021 (Virtual): IAPG Short Course SC4.4 “Foundations and Perspectives of Geoethics for Earth, Marine and Atmospheric Sciences - In memoriam of Jan Boon”. Convenership: Eduardo Marone, Giuseppe Di Capua, Silvia Peppoloni. 9 online presentations: <https://meetingorganizer.copernicus.org/EGU21/session/38936> (29 April).
- Publication of the video “10 years of sessions on geoethics at the EGU General Assembly” (Introduction to the session EOS4.2 at the EGU 2021): <https://youtu.be/aKGmN0kFFM8> (30 April).

May 2021

- Publication in the IAPG YouTube channels of the videos of the lectures held in the Short Course SC4.4 “Foundations and Perspectives of Geoethics for Earth, Marine and Atmospheric Sciences

- In memoriam of Jan Boon” at the EGU 2021. Videos: <https://iapgeoethics.blogspot.com/2021/05/watch-videos-of-short-course-on.html> (4 May).
- New article published in the IAPG Blog: “Geoethics as a Point of Intersection of Humans' Cultural Experiences” by Silvia Peppoloni (Italy) (<http://www.geoethics.org/articles-from-iapg-blog>) (6 May).
 - Silvia Peppoloni (IAPG Secretary General) was invited speaker at the round table on health and humanities in the European Humanities Conference 2021. Video: <https://europeanhumanities2021.pt/sessions/health-and-humanities-round-table/> (7 May).
 - Peter Bobrowsky (IAPG Continental Coordinator for North America) provided input and advice to the Scientific Committee for Antarctic Research (SCAR) on behalf of IAPG regarding their efforts on developing new codes of conduct and behaviour for research activities in the Antarctica (10-14 May).
 - Luis Alberto Araújo Ramos (IAPG-Peru board) gave an online talk (in Spanish), entitled “Geoethics in Peru” (16 May).
 - New paper published in the special issue on geoethics of the journal Sustainability, edited by Silvia Peppoloni (IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer): *Conversi D. (2021). Exemplary Ethical Communities. A New Concept for a Livable Anthropocene. Sustainability, 13(10), 5582, <https://doi.org/10.3390/su13105582>* (17 May).
 - IAPG Executive Council expressed its full support to the Lisbon Declaration on Humanities, Open Research and Innovation: <https://europeanhumanities2021.pt/lisbon-declaration/> (19 May).
 - Vince Cronin (IAPG-USA Co-coordinator) represented the IAPG at the American Geosciences Institute’s (AGI) virtual Spring 2021 Member Society Council (MSC) meeting (21 May).
 - Mike Buchanan (United Kingdom) was appointed in the IAPG Board of Expert for the topic “Geoethics in Speleology”: <https://iapgeoethics.blogspot.com/2021/05/mike-buchanan-is-new-member-of-iapg.html> (24 May).
 - Peter Bobrowsky (IAPG Continental Coordinator for North America) was interviewed by Daniel Minisini (Minigeology). Video: <https://youtu.be/jf4RM8YGa8Y> (27 May).
 - Silvia Peppoloni (IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer) presented their book in Italian “Geoetica - Manifesto per un’Etica della Responsabilità verso la Terra” (Geoethics – Manifesto for Ethics of Responsibility towards the Earth) at the event “Progetto Gutenberg 2021 - XVIII edizione, dal titolo Homo sapiens? Fragile civiltà” (Gutenberg Project: XVIII edition, entitled Homo sapiens? Fragile civilization (<https://gutenbergcalabria.it/2021->

homo-sapiens-fragile-civilta/, in Italian). Video: https://youtu.be/zIIQnoS8_FA (27 May).

June 2021

- New coordinator for IAPG-Peru: Pedro Isique replaced Carlos Toledo Gutierrez (1 June).
- New article published in the IAPG Blog: “A planet of geodiversity” by Silvia Peppoloni (Italy) (<http://www.geoethics.org/articles-from-iapg-blog>) (7 June).
- Geoethics was included into the “Scientific Outcome of the IPBES-IPCC co-sponsored workshop on biodiversity and climate change” (IPBES: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services; IPCC: Intergovernmental Panel on Climate Change). This document can be downloaded here: https://www.ipbes.net/sites/default/files/2021-06/2021_IPCC-IPBES_scientific_outcome_20210612.pdf. In the Section 4.2 “Human and Social Dimensions” (page 49) you can read the following sentences, that include also the definition of geoethics by IAPG: “Ethical behaviour with respect to nature (“geoethics”) is at the core of several discussions regarding adaptation. The values which underpin appropriate behaviours and practices wherever human activities interact with the Earth system play an important role in the awareness of society regarding problems with biodiversity and NCP. Ethical, social, and cultural implications of both scientific knowledge and humankind’s role as an active geological force on the planet and the ethical responsibility that this implies need to be addressed in every plan of action (Bobrowsky et al., 2017). This includes equity issues linked to biodiversity related interventions. These are often not distributionally neutral and have equity implications both within and between generations.” The paper on geoethics cited in the document is: *Bobrowsky, P., Cronin, V.S., Di Capua, G., Kieffer, S.W., & Peppoloni, S. (2017). The emerging field of geoethics. Scientific Integrity and Ethics in the Geosciences, 73, 175.* <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1002/9781119067825.ch11> (14 June).
- IAPG established the Task Group on Responsible Speleology (TGRS). This Task Group is formed by Mike Buchanan (United Kingdom), Carolyn Ramsey (Canada) and Aleksandar Antić (Serbia): <https://iapgeoethics.blogspot.com/2021/07/new-iapg-task-group-on-responsible.html> (21 June).
- Interview by Sofia Berlardinelli (Il BoLive of the University of Padova) to Silvia Peppoloni (IAPG Secretary General) and to Giuseppe Di Capua (IAPG Treasurer) on responsibility, anthropocentrism, biocentrism and ecocentrism in the vision of geoethics, ecological humanism. Video (in Italy): <https://www.youtube.com/watch?v=90vR50bTouY>; article (in Italian):

<https://ilbolive.unipd.it/it/news/geoetica-dalle-geoscienze-unetica-globale> (21 June).

- IAPG report was included in the 2020 Annual Report of the IUGS. Download the 2020 Annual Report of the IUGS and read the IAPG report from page 73 to page 76: https://98ca4554-1361-4fb1-a4d8-a1bb16d032e6.filesusr.com/ugd/f1fc07_ca038c357c7a41e7914ab9ff35e90118.pdf?index=true (22 June).
- Elizabeth Rovere and Roberto Violante (IAPG Geoethics-Argentina Co-coordinators) launched the call for contributions for the Symposium S3 “Geological Hazards and Geoethics” (Peligros Geológicos y Geoética) at the XXI Argentinian Geological Congress (Congreso Geológico Argentino), to be held in virtual format in March 2022: https://f420cbad-ec08-4c39-902f-b0e5afecb44a.filesusr.com/ugd/5195a5_843db4468e8542d9bb3d601c5c201ac9.pdf?index=true (23 June).
- Lorna Dawson (IAPG Task Group on Geoethics in Forensic Geology) Gave a pre-recorded talk entitled “Geoethics in Forensic Geology: A White Paper” at the 50th Brazilian Congress on Geology. The presentation was signed by L. Dawson, R. Di Maggio, J. McKinley, G. Di Capua, S. Peppoloni, J. Pringle, D. Auchie, D. Parratt (28 June).
- New paper published in the special issue on geoethics of the journal Sustainability, edited by Silvia Peppoloni (IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer): *Georgousis E., Savelides S., Mosios S., Holokolos M.-V., and Drinia H. (2021). The Need for Geoethical Awareness: The Importance of Geoenvironmental Education in Geoheritage Understanding in the Case of Meteora Geomorphes, Greece. Sustainability, 13(12), 6626, <https://doi.org/10.3390/su13126626>* (28 June).
- New book: *Di Capua G., Bobrowsky P.T., Kieffer S.W. and Palinkas C., eds. (2021). Geoethics: Status and Future Perspectives. Geological Society, London, Special Publications, 508, <https://doi.org/10.1144/SP508>* (30 June).

July 2021

- New article published in the IAPG Blog: “Sustainable Mining – what exactly does it mean?” by David Ovidia (United Kingdom) (<http://www.geoethics.org/articles-from-iapg-blog>) (5 July).
- Opening of the section IAPG-Bolivia. Wilfredo Ramos Collorana (Universidad Mayor San Andrés - UMSA, La Paz; President of “Colegio de Geólogos de Bolivia”) appointed as coordinator: <https://iapgeoethics.blogspot.com/2021/07/the-iapg-section-of-bolivia-welcome-to.html>. IAPG-Bolivia is the thirty-third section of the IAPG (5 July).
- New article published in the IAPG Blog: “Meteorological or anthropogenic drought? A recent

study illustrates the environmental, social and economic risks” by Silvia Peppoloni (Italy) (<http://www.geoethics.org/articles-from-iapg-blog>) (10 July).

August 2021

- Opening of the section IAPG-Afghanistan. Mohammad Salem Hussaini (Kabul Polytechnic University) and Asadullah Farahmand (Ministry of Energy and Water, Kabul) appointed as co-coordinators: <https://iapgeoethics.blogspot.com/2021/08/the-iapg-section-of-afghanistan-welcome.html>. IAPG-Afghanistan is the thirty-fourth section of the IAPG (2 August).
- New paper published in a scientific journal: *DeMiguel D., Brilha J., Alegret L., Arenillas I., Arz J.A., Gilabert V., Strani F., Valenciano A., Villas E. and Azanza B. (2021). Linking geological heritage and geoethics with a particular emphasis on palaeontological heritage: the new concept of 'palaeontoethics'. Geoheritage, 13, 69, <https://doi.org/10.1007/s12371-021-00595-3> (3 August).*
- New article published in the IAPG Blog: “The "dark" side of the Moon (and space), between jurisprudence, politics and ecology” by Silvia Peppoloni (Italy) (<http://www.geoethics.org/articles-from-iapg-blog>) (10 August).
- New article published in the IAPG Blog: “What's news about socio-hydrogeology” by Enrico Cameron (Italy) (<http://www.geoethics.org/articles-from-iapg-blog>) (31 August).

September 2021

- Oana T. Moldovan (Romania) appointed as member of the IAPG Task Group on Responsible Speleology (TGRS). She replaced Carolyn Ramsey (Canada) (1 September).
- New paper published in a scientific journal: *Chaminé H.I., Abrunhosa M., Barbieri M., Naves A., Errami E., Aragão A. and Di Capua G. (2021). Hydrogeoethics in sustainable water resources management facing water scarcity in Mediterranean and surrounding regions. Mediterranean Geoscience Reviews, 3(3), 289-292. <https://doi.org/10.1007/s42990-021-00069-2> (1 September).*
- Launch of the call for contributions to celebrate the International Geoethics Day 2021, to be held on 14 October 2021: <https://iapgeoethics.blogspot.com/2021/09/international-geoethics-day-2021-14.html> (3 September)
- Publication of the IAPGeoethics Newsletter, issue #2–2021: <http://www.geoethics.org/newsletter> (4 September).
- New paper published in the special issue on geoethics of the journal Sustainability, edited by

Silvia Peppoloni (IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer):
Peppoloni S. and Di Capua G. (2021). Geoethics to Start Up a Pedagogical and Political Path towards Future Sustainable Societies. Sustainability, 13(18), 10024. <https://doi.org/10.3390/su131810024> (7 September).

- New book: *Ying Kit Chan (2021). Geoethics. Works by Ying Kit Chan. Old Stone Press, pp. 158, ISBN 978-1938462542. <https://oldstonepress.com/library/geoethics/> (9 September).*
- Martin Bohle (IAPG Board of Expert) delivered a presentation entitled “Geo-Rational - Ethics in/for the Geosciences” and Dominic Hildebrandt (IAPG member) a presentation entitled “Shaping responsible future experts: the need for integrating Geoethics in Geoscience university education” in the session Session 12.3 “Geoscience and Society” at the virtual conference GeoKarlsruhe 2021 (22 September).
- IAPG-Italy contributed to the issue 5 of the magazine “Geologicamente” of the Italian Geological Society (SGI). On this magazine there are dedicated pages on geoethics managed by IAPG-Italy (that is also the Section of Geoethics and Geological Culture of the SGI): <https://www.socgeol.it/files/download/pubblicazioni/Geologicamente/GEOLOGICAMENTE%205%20intero%20WEB.pdf> (29 April).
- Eduardo Marone (IAPG-Brazil coordinator) informed to be chair of the module “Geoethics” in the Training Course on Ocean Governance, Ocean Sciences, and Geoethics, organized by the International Ocean Institute - Training Centre for Latin America and the Caribbean (IOI-TC-LAC) and supported by IAPG, to be held from November 2021 to February 2022: <https://iapgeoethics.blogspot.com/2021/09/geoethics-in-training-course-on-oceans.html> (27 September).
- New book: *Bohle M. and Marone E., Eds. (2021). Geo-societal Narratives - Contextualising geosciences. Palgrave Macmillan, Cham, XXV+221 pp., ISBN 978-3030790271. <https://doi.org/10.1007/978-3-030-79028-8> (30 September).*

October 2021

- Manuel Abrunhosa (IAPG Board of Experts) gave a talk in the webinar entitled “Hydrogeoethics: the newest Hydrogeology discipline”, included in the “Where Groundwater Meets” series and organised by IAH’s Western and Central European Chapters (1 October).
- Vince Cronin (IAPG-USA co-coordinator) represented the IAPG at the American Geosciences Institute’s (AGI) virtual Fall 2021 Member Society Council (MSC) meeting, that was held jointly with the Geological Society of America’s Associated Societies (4 October).

- IAPG celebrated the 5th edition of the International Geoethics Day: <https://iapgeoethics.blogspot.com/2021/10/happy-geoethics-day-2021-14-october.html> and <https://iapgeoethics.blogspot.com/2021/10/initiatives-to-celebrate-international.html> (14 October).
- Vince Cronin (IAPG-USA co-coordinator) gave an online talk on geoethics at the “International Workshop on Geoethics with focus on Geohazards and Mining Disasters”, organized by NIDM - National Institute of Disaster Management (India) and IAPG-India. Video: <https://www.youtube.com/watch?v=gPIyNf8RNzM&t=2s> (14 October).
- Giuseppe Di Capua (IAPG Treasurer and IAPG-Italy), Pedro Isique (IAPG-Peru Coordinator), Elizabeth Rovere (IAPGeoethics-Argentina Co-coordinator), Wilfredo Ramos Collorana (IAPG-Bolivia Coordinator) were panelist of the online roundtable on geoethics organized by IAPG-Bolivia at the XXIV Bolivian Geological Congress, held in La Paz (Bolivia) (22 October).
- Sandra Villacorta (IAPG-Peru Scientific Coordinator) gave a talk entitled “Geoethics and its importance in Latin America” (Geoética y su importancia en América Latina) at the First International Congress “Study and Application of Geoscience on Earth and in the Space” (Primer Congreso Internacional “El Estudio y la Aplicación de las Geociencias en la Tierra y en el Espacio”), organized by Centro de Inteligencia y Análisis Estratégico under the auspices of the Centro de Investigaciones Geopolíticas en Energía y Medio Ambiente de México (25 October).
- IAPG-Chile organized the special session “Towards the construction of the Geoethics Code for the geoscience community in Chile” in the Symposium of the Geology of Chile (SAGChi). Luisa Pinto Lincoñir (IAPG-Chile Coordinator) gave a talk entitled “¿Qué principios y qué valores? El desafío de la construcción de un código de geoética” (What principles and what values? The challenge of building a code of geoethics) and Roberto Lencina Kairuz (IAPGeoethics-Argentina member) gave a talk entitled “Litio en la Puna Argentina: La percepción de las comunidades indígenas y el rol de los geocientíficos ¿un dilema ético de la transición energética?” (Lithium in the Argentinian Puna: The perception of indigenous communities and the role of geoscientists, an ethical dilemma of the energy transition?) (26 October).
- New special issue: *Chaminé H.I., Abrunhosa M., Barbieri M., Naves A., Errami E., Aragão A. and Di Capua G. (2021). Hydrogeoethics in Sustainable Water Resources Management Facing Water Scarcity in Mediterranean and Surrounding Regions. Mediterranean Geoscience Reviews, 3(3).* <https://link.springer.com/journal/42990/volumes-and-issues/3-3> (27 October).
- Giuseppe Di Capua (IAPG Treasurer) held an invited talk entitled “Foundations of Geoethics” in the seminar series organized by the GSAf - Geological Society of Africa (29 October).

November 2021

- IAPG launched the call for abstracts for 2 sessions at the EGU 2022:
 - Session EOS4.1: Geoethics in the face of global anthropogenic changes: how do we intersect different knowledge domains? (Conveners: Silvia Peppoloni, John Ludden, Luiz Oosterbeek, Pimnutcha Promduangsri, Billy Williams). Session co-sponsored by IAPG, AGU, CIPSH, IUGS.
 - Session EOS1.8: Climate & ocean literacy: Helping people to care ethically within planetary boundaries (Conveners: David Crookall, Giuseppe Di Capua, Bärbel Winkler, Francesca Santoro, Mario Mascagni). Session sponsored by IAPG.

Moreover the IAPG proposed the Short Course:

- SC4.1: Geoethics for Earth, Marine and Atmospheric Sciences (Convenership: Eduardo Marone, Silvia Peppoloni)
(2 November).
- IAPG informed about a new discount for the IAPG members who apply for the eLearning Course “Practical Geocommunication” by Geologize Ltd. As a member of an endorsing association, IAPG members had a 70% the Black Friday Discount on the course fee: <https://iapgeoethics.blogspot.com/2021/11/elearning-course-practical.html> (11 November).
- Online Talk (in German) by Dr. Dominic Hildebrandt (IAPG member) at the Interdisciplinary Weeks at the Fachhochschule Kiel (Germany). The talk was entitled “Geoethik – ethische Fragen in den Geowissenschaften” (Geoethics – ethical questions in the Geosciences) (12 November).
- Online Talk by Dr. Dominic Hildebrandt (IAPG member) at the Colloquium of GeStEIN (umbrella organization of German Geoscience student representatives). The talk was entitled “Shaping responsible future experts: the need for integrating Geoethics in Geoscience university education.” Video: <https://www.youtube.com/watch?v=OQ8LL9XVs6A> (16 November).
- Giuseppe Di Capua (IAPG Treasurer) held an online lecture entitled “Geoethics: from an ethics for geosciences to a global ethics for societies”. The event was organized by the GeoZS - Geological Survey of Slovenia for its 75th Anniversary. Video: <https://www.youtube.com/watch?v=V3TiXhVQKiE> (17 November).
- Sandra Villacorta (Peru) and Iain Hay (Australia) are awarded the Geoethics Medal 2021. Motivations:

“Sandra Villacorta is one of the outstanding figures in geoethical practice in the Spanish-

speaking region. She has made a measurable impact over the past 10 years as a passionate advocate for promoting the spread of Geosciences in the society as well as the improvement of Geosciences education quality and leading the advance in geoethics in Latin America. She was the founder of the International Association for Promoting Geoethics (IAPG) Peruvian section, highlighted in the region. Since 2014 she has dedicated herself to promoting scientific integrity, ethics, and equality in geosciences, as well as giving conferences and writing articles on geoscience subjects and geoethics to spread it in the Spanish language. Her volunteer activities include: working with the International Union of Geological Sciences (Commission on Geoscience Education) and the International Geoscience Education Organization to help the improvement of Geosciences education worldwide and working in raising the awareness of applying Geosciences as part of the solutions for the development in Latin American countries, as a member of international committees. She has also assisted the Peruvian Groups of the International Association for Engineering Geology and the Environment and IAPG with encouraging the use of worldwide techniques of engineering geology and ethical values to solve environmental problems faced in Peru and frequently been asked to give public talks as well as to appear as the subject of a variety of media material, encouraging awareness in disaster prevention in Peru. Sandra is an example of a high level of commitment to the practice of geoethics, academic excellence and develops its activities as a geoethical duty to society.”

*“Iain Hay has pioneered the field of geographies of domination and oppression in a lifetime’s work acknowledged by a rare Doctor of Letters (University of Canterbury 2009). His research unmasks unintended and insidious ways in which injustice is created, reproduced and transformed. He works tirelessly to overcome injustice through practical and conceptual means and has led international professional development initiatives on ethics in geography; shaped geographical organisations’ codes of ethics; and developed influential educational resources on ethics. Iain’s lasting service to geoscience professions includes as First Vice-President of the International Geographical Union, President of the Institute of Australian Geographers, Chair of the Australian Academy of Science’s National Committee for Geography, and Councillor of the global Committee on Publication Ethics (COPE). He co-founded the ground-breaking journal *Ethics, Place and Environment* and promoted its ambitions for twelve years as Asia-Pacific Commissioning Editor. He has been Editor-in-Chief of *Geographical Research* and Editor of *South Australian Geographical Journal*. Iain co-authored the innovative *Research Ethics in the Social Sciences* and continues to write extensively on ethics in geography.*

Contributors to his landmark multi-edition book *Qualitative Research Methods in Human Geography* are entreated to emphasise ethical concerns, social justice, issues of racism, ableism, sexism, and Indigenous issues in their chapters. Iain's dedication to justice and the development of geoethical understandings is acknowledged by awards from the: American Association of Geographers, New Zealand Geographical Society, and Royal Geographical Society. He is the only geographer to receive the Australian Prime Minister's Award for University Teacher of the Year."

- 7th edition of MinerLima, the geoscience exhibition organized by IAPG-Peru, held in Lima (Peru). Topic: "For a sustainable and inclusive mining": <https://minerlima.wixsite.com/minerlima/minerlima2021>.
 - Programme: https://www.geoethics.org/_files/ugd/5195a5_63f90deb44e54625a636d2740d24f832.pdf?index=true.
 - Video: <https://youtu.be/PC3qIKS2JN0> (18-21 November).
- The 41st session of the UNESCO General Conference established the International Geodiversity Day, to be held every year on 6 October. IAPG was among the organizations supporting the proposal submitted to UNESCO: <https://iapgeoethics.blogspot.com/2021/11/international-geodiversity-day-was.html> (23 November).
- Silvia Peppoloni (IAPG Secretary General) gave an invited talk (virtual mode) entitled "Ethics for Disaster Risk Reduction and Resilience" in the "One Week Faculty Development/ToT Programme on Disaster Management", organized by the National Institute of Disaster Management (NIDM), Ministry of Home Affairs (India), in collaboration with the University of Petroleum and Energy Studies (UPES), Dehradun, Uttarakhand (India). Surya Parkash (Head of the GMR Division at NIDM and IAPG-India Coordinator) chaired the event and gave a talk entitled "Basic Understanding of Disaster Management" (25 November).
- New paper published in a scientific journal: *Ribeiro T., Lima L. and Vasconcelos C. (2021). The need for transparent communication in mining: a case study in lithium exploitation. International Journal of Science Education, Part B.* <https://doi.org/10.1080/21548455.2021.1999530> (25 November).
- Eduardo Marone (IAPG-Brazil coordinator) chaired the module "Geoethics" in the Training Course on Ocean Governance, Ocean Sciences, and Geoethics, organized by the International Ocean Institute - Training Centre for Latin America and the Caribbean (IOI-TC-LAC) and supported by

IAPG. The course started in November 2021: <https://www.ioitclac.org/training-programs/virtual-2021/schedule/> (30 November).

December 2021

- Giuseppe Di Capua (IAPG Treasurer) gave an invited talk entitled “Geoethics as global ethics to face global anthropogenic changes”, at the The Second CIPSH International Academy on Chinese Cultures and Global Humanities Seminar on “Global Challenges and Global Ethics in a time of Pandemic and Climate Change”, organized by Union Académique Internationale (UAI) in collaboration with the Stockholm China Center at the Institute for Security and Development Policy (ISDP) in Stockholm (Sweden) (6 December).
- Nic Bilham (IAPG Continental Coordinator for Europe, University of Exeter) gave an invited speech entitled “Sustainable development and the energy transition: a geoethical perspective” and Pedro Isique (IAPG-Peru Coordinator) gave an invited speech entitled “Geoethics and the exploitation of georesources”, at the third version of the “Encuentro de Sostenibilidad y Energía – Sustainability and Energy Summit” (virtual event), organized by the Colombian Association of Petroleum Geologists and Geophysicists (ACGGP) and the American Association of Petroleum Geologists AAPG Latin America and the Caribbean Region (9 December).
- Mohammad Salem Hussaini and Asadullah Farahmand (IAPG-Afghanistan Co-coordinators) gave a talk (in Persian, slides in English) entitled “Introduction to Hydrogeoethics: A new transdisciplinary approach in water science” in the AWEP Net (Afghans Water and Environment Professionals Network) seminar series (virtual mode) (12 December).
- Opening of the section IAPG-Germany. Simon Schneider (Ludwig Maximilian University of Munich) and Dominic Hildebrandt (Ludwig Maximilian University of Munich and ETH Zurich) appointed as co-coordinators: <https://iapgeoethics.blogspot.com/2021/12/the-iapg-section-of-germany-welcome-to.html>. The section is based at the Department of Earth and Environmental Sciences of the Ludwig Maximilian University of Munich. IAPG-Germany is the thirty-fifth section of the IAPG (13 December).
- Silvia Peppoloni (IAPG Secretary General) represented IAPG at the XXXV General Assembly of the CIPSH - International Council for Philosophy and Human Sciences (<http://www.cipsh.net/>). Even Giuseppe Di Capua (IAPG Treasurer) attended the General Assembly as IAPG representative within the CIPSH Executive Committee 2020-2023. The CIPSH General Assembly took place in Odense (Denmark) in a mixed mode (presence and

virtual). IAPG is a member organisation of the CIPSH from 2017 (13-14 December).

- Publication of the IAPGeoethics Newsletter, issue #3–2021: <http://www.geoethics.org/newsletter> (14 December).
- IAPG-Peru formed a committee to organise the 1st Geoscience Olympiad in Peru. Members of the committee: Sandra Villacorta (General Coordinator and IAPG-Peru Scientific Coordinator), Luz Tejada, Judith Sullón and Kevin Díaz (representative of IAPG-Peru student group). The Peruvian Geoscience Olympiad is planned to be held by April 2022: <https://iapgperuviansection.wixsite.com/geolympiadperu> (17 December).
- IAPG-Peru, with the support of the IAPG-Peru Student Group, held the 4th Round Table on Geoethics entitled “On geoethics in Peru: Towards the development of geoethical policies”. Video: <https://www.youtube.com/watch?v=Z1OQPPWAeuo> (18 December).

PLANS FOR 2022

- Editorial projects
 - Book: Peppoloni S. and Di Capua G. (2022). *Geoethics: manifesto for an ethics of responsibility towards the Earth*. Springer (in print).
 - Book: Villacorta Chambi S.P., ed. (2022). *Geoethics in Peru - A Pathway for Latin America*. SpringerBriefs in Geoethics, Springer International Publishing, pp. XXIII+107. ISBN 978-3030867300. <https://doi.org/10.1007/978-3-030-86731-7> (in print).
 - Book: Di Capua G. and Oosterbeek L., eds. (2022). *Bridges to global ethics: geoethics at the confluence of humanities and sciences*. SpringerBriefs in Geoethics, Springer International Publishing (in preparation).
 - Special Issue: Peppoloni S. and Di Capua G., eds. (2022). *New Advances on Geoethics and Sustainable Development*. Sustainability (in preparation).
 - New book proposals for the SpringerBriefs in Geoethics are expected to be submitted.
- International/National conferences/meetings, lectures, seminars
 - Online Talk by Dominic Hildebrandt (IAPG-Germany Co-coordinator) at the Geosciences Colloquium, Institute for Geoscience, Friedrich Schiller University Jena (Germany). The talk is entitled “Shaping responsible future experts: the need for integrating Geoethics in Geoscience university education.” (13 January 2022).
 - Online Talk (in German) by Simon Schneider (IAPG-Germany Co-coordinator) by invitation

of the Geologische Gemeinschaft zu Freiberg e.V. The talk is entitled “Geoethik - Wer Relevanz einfordert muss Verantwortung übernehmen” (Geoethics - Those who demand relevance must take responsibility). (26 January 2022).

- IAPG-Peru will organize the 1st Geoscience Olympiad in Peru: <https://iapgperuviansection.wixsite.com/geolympiadperu> (February-April 2022).
- Elizabeth Rovere and Roberto Violante (IAPGeoethics-Argentina Co-coordinators) will co-organize the Symposium S3 “Geological Hazards and Geoethics” (Peligros Geológicos y Geoética) at the XXI Argentinian Geological Congress (Congreso Geológico Argentino), that will be held in a virtual format. Initially the congress was to take place in Puerto Madryn, Chubut (Argentina). Silvia Peppoloni (IAPG Secretary General) and Giuseppe Di Capua (IAPG Treasurer) will give invited talks on geoethics. This symposium is sponsored by IAPGeoethics-Argentina (14-18 March 2022).
- IAPG representatives will attend the 77th Executive Committee meeting of the IUGS - International Union of Geological Sciences and will present its annual report on 2021 activities and 2022 plans (14-19 March 2022).
- IAPG supports 2 sessions at the EGU General Assembly 2022: <https://www.geoethics.org/egu2022> (23-27 May 2022):
 - Session EOS4.1: Geoethics in the face of global anthropogenic changes: how do we intersect different knowledge domains? (Conveners: Silvia Peppoloni, Giuseppe Di Capua, John Ludden, Luiz Oosterbeek, Pimnutcha Promduangsri, Billy Williams). This session is co-supported by IUGS, AGU, CIPSH;
 - EOS1.8: Climate & Ocean Literacy: Helping people to care ethically within planetary boundaries (Conveners: David Crookall, Giuseppe Di Capua, Bärbel Winkler, Francesca Santoro, Mario Mascagni).
- IAPG supports the session “Seismology, geoethics an society: risk communication at the service of risk reduction” (Conveners: Silvia Peppoloni, Laure Fallou, Irina Dallo, Femke Mudler) at the 3rd European Conference on Earthquake Engineering & Seismology (3ECEES), to be held in Bucharest (Romania) (4-9 September 2022).
- IAPG supports the session “Geosciences and geoethics: achieving UN Agenda 2030” (Conveners: Francesca Lozar, Elena Egidio, Andrea Gerbaudo, Marco Tonon, Silvia Peppoloni, Giuseppe Di Capua) at the Joint 91st congress of the Società Geologica Italiana (Italian Geological Society) and 95th congress of Società Italiana di Mineralogia e Petrologia

(Italian Society of Mineralogy and Petrology) to be held in Turin (Italy) (19-21 September).

- Activities of the School on Geoethics (“Schola”)

- SC4.1: Geoethics for Earth, Marine and Atmospheric Sciences. (Conveners: Eduardo Marone and Silvia Peppoloni) at the EGU General Assembly 2022: <https://www.geoethics.org/egu2022>. The short course is co-sponsored by IAPG (May 2022).

- Projects

- Silvia Peppoloni (IAPG Secretary General) will be scientific coordinator of the project ERG – Educational Resources on Geoethics, funded by Istituto Nazionale di Geofisica e Vulcanologia, Rome (Italy) (February-December 2022).

- Other activities (main initiatives by IAPG and its national sections)

- Peter Bobrowsky will be appointed Vice President of the IAPG. He will replace Susan Kieffer who stepped down (1 January 2022).
- Vince Cronin will be appointed IAPG Continental Coordinator for North America. He will replace Peter Bobrowsky (1 January 2022).
- Silvia Peppoloni (IAPG Secretary General), as a STEM Leader, will be an invited panelist at the event “Inspire and Empower Webcast for Women in Science and Engineering”, organized by the Geoscience and Remote Sensing Society (GRSS) (24 February 2022).
- Silvia Peppoloni (IAPG Secretary General) will hold a seminar on geoethics at the RomaTre University, Italy (April 2022).
- Silvia Peppoloni (IAPG Secretary General) will hold a keynote on geoethics and georisks at the International Workshop on Natural Hazards (Terceira Island, Azores, Portugal) (20-21 May 2022).
- Silvia Peppoloni (IAPG Secretary General), as member of the ICOS Ethical Board, will attend the General Assembly of ICOS - Integrated Carbon Observation System (Prague, Czech Republic) (24-25 May 2022).
- IAPG will contribute with articles to the newsletter of the Geological Society of Africa (GSAf) (February-December 2022).
- IAPG will assign the Geoethics Medal 2022: <https://www.geoethics.org/geoethics-medal> (October-November 2022).
- IAPG will celebrate the 6th anniversary of the International Geoethics Day. Hashtag of this event: #geoethicsday2022: <https://www.geoethics.org/geoethics-day> (13 October 2022).

- IAPG-Peru will organize the 8th anniversary event of MinerLima “Feria Internacional de Minerales y Fósiles en el Perú” (International Exhibition of Minerals and Fossils in Peru). Themes: cristals, minerals, rocks and fossils. General Coordinator: César Chacaltana Budiel (November 2022).
- IAPG-Peru has planned to develop videos and flyers to promote the Geoethical Promise in Peru.
- IAPG Task Group on Responsible Speleology will release a White Paper.
- IAPG in cooperation with IFG-Initiative on Forensic Geology, will continue activities to draft the White Paper on Geoethics in Forensic Geology.
- IAPG Task Group on Geoethics and Geoheritage will draft a White Paper.
- IAPG will continue to enlarge its network by opening new national sections.
- IAPG will continue to spread news, and information about contents, activities and initiatives on geoethics through its website, blog, social networks and newsletter.

Name, address and e-mail of person preparing this report

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