INTERNATIONAL UNION OF GEOLOGICAL SCIENCES

FOSTERING A GLOBAL VOICE FOR THE GEOSCIENCES THROUGH
120+ MEMBER COUNTRIES 50+ AFFILIATED ORGANIZATIONS
IN ASSOCIATION WITH ICSU AND UNESCO

2010 Annual Report

About the Front Cover

The Torres del Paine intrusive complex in southern Chile, comprises a well-exposed granitic laccolith and mafic stock fed by dykes intruded at shallow depths (2 to 4 km) during mid-Miocene times some 12 million years before present (BP) into thrust-folded early Tertiary, Cretaceous and older sedimentary sequences. During the Pleistocene Epoch, Patagonian glaciers mirrored the climate structure of Antarctica and were out of phase with ice sheets in the northern hemisphere. Glaciers in the Torres del Paine National Park deeply incised pre-existing bedrock valleys, and reached their maximum extent some 40 km beyond the present ice margin and mountain front between 25,000 and 23,000 years BP. Deglaciation occurred in two stages at 17,500 and 11,500 years BP (equivalent to the middle of the Younger Dryas in the northern hemisphere), with an advance coinciding with the Antarctic Cold Reversal ca. 15,000 to 12,000 years BP. A series of large end moraines east of Lago Nordenskjold and Lago Sarmiento record the terminal positions of Pleistocene glaciers; smaller moraines in mountain valleys and cirque basins record the retreat of Holocene glaciers.

About the IUGS Logo

The IUGS logo represents a person accepting the burden of responsibility for the Earth.

INTERNATIONAL UNION OF GEOLOGICAL SCIENCES

Annual Report 2010

Contents ***Page***

Please cite the report as:
"Annual Report of the International Union of Geological Sciences for 2010"

Please note that a list of acronyms used in the report is given in Appendix 8 at the end of the document.

Foreword

The 2010 Annual Report of the International Union of Geological Sciences (IUGS) covers the period between the 61st and 62nd Executive Committee meetings, held in Paris, France. Over this period, the Union continued to grow in membership, in number of Affiliated Organizations, in public outreach initiatives, in relation to other International Council of Science (ICSU) geo-unions, and in its ability to generate financial support for international science projects. The work of the new Executive Committee will build on the progress of past executive committees, including addressing the Strategic Plan, the Statutes and Bylaws and relationships with the International Geological Congress (IGC).

The Union continued in its' efforts to unite the global geological community through: (a) Promoting development of the geoscience through the support of broad-based scientific studies relevant to the entire Earth-System; (b) Applying the results of these and other studies towards preserving Earth's natural environment, using all natural resources wisely, and improving the prosperity of nations and the quality of human life; (c) Strengthening public awareness of geology and promoting geoscience education; and d) Increasing the IUGS financial support to the IGCP. As the leading NGO of the world geological community, IUGS continued to unite geologists from different countries and branches of geology. Among the NGOs, the only way to achieve unanimity is through consultation, and without unity of actions, the major aims of IUGS would not be achieved. Transparency and democracy are important preconditions to achieve consensus when combined with the division of responsibilities.

IUGS – role, structure, membership

THE ROLE OF IUGS

The International Union of Geological Sciences (IUGS) is a member of the International Council for Science (ICSU; http://www.icsu.org) and has represented all geological scientists at the highest international level since its formation in 1961. Both fundamental research and applied aspects of the Earth sciences of an international and interdisciplinary nature are supported by the Union, through a number of Commissions, Task Groups and Initiatives, as detailed elsewhere. IUGS collaborates with UNESCO (http://www.unesco.org) in supporting the International Geosciences Programme (IGCP), and also works with its Affiliated Organizations and with ICSU on topics of mutual interest. IUGS keeps a non-political, and thus a non-governmental stance and remains a non-for-profit making Organization.

STRUCTURE OF IUGS

The Council, which is the highest body of IUGS, meets every four years at the International Geological Congress, where the representatives of the active members vote on the direction the Union shall take in the subsequent four years.

The Executive Committee comprises the ten elected Executive Officers of IUGS: (President, Secretary-General and Treasurer, the Past-President, two Vice-Presidents and four Councillors). The officers play an active role in running the Union, developing new science programmes, representing the best interests of the Union at congresses and elsewhere, preparing the electronic-bulletin and acting on both standing and ad-hoc committees. The day-to-day work is carried out by the Bureau, comprising the President, Secretary General and Treasurer; these officers meet regularly throughout the year to address the progress of the various matters of concern and interest to the Union.

IUGS MISSION AND GOALS

The mission of the IUGS is to unite the global geological community in promoting development of the earth sciences through the support of broad-based scientific studies relevant to the entire earth-system and applying the results of these and other studies to preserving Earth's natural environment, using all natural resources wisely, and improving the prosperity of nations and the quality of human life. The goals of the IUGS include the following:

1) Serve as an impartial international scientific union addressing global issues that involve the earth sciences.

2) Contribute to the advancement of geological research throughout the world, including both fundamental earth science aimed at understanding the global system (a plexus of geological, geophysical, geochemical and biological processes and their myriad interactions), and applied earth sciences that use the cumulative understanding of the earth system to address problems of particular relevance to the global welfare of humans.

3) Represent the geological sciences in governmental and non-governmental forums to inform, provide advice and influence public policy and decision makers.

4) Encourage, in cooperation with other organizations, more interdisciplinary involvement within the broad spectrum of the geosciences in developing solutions to global problems.

5) Foster collaboration between more developed and less developed countries in earth science research, capacity building and applications.

6) Contribute to earth science education and the advancement of public understanding of the earth sciences and their significance in solving societal problems.

7) Encourage the career development of young earth scientists.

8) Increase the relevance of IUGS publications to issues of truly global earth science and make these publications more widely available.

9) Enhance the visibility of the earth sciences and demonstrate their profound influence in planning for rehabilitation and preservation of future planetary environment by seeking greater involvement in public affairs and by publicizing the critical role that only earth sciences can play.

MEMBERSHIP OF IUGS

The Adhering Organizations of IUGS cover the majority of geoscientists of the world. Affiliated Organizations (primarily international professional scientific societies)

provide a valuable link to a wide cross-section of the world's earth science community. These organizations range in size from less than 100 to more than 250,000 members. Appendix 2, gives a full list of the current Adhering Organizations, together with their membership category and status during 2010.

Inactive Adhering Organizations must pay the Membership Fees for the previous two years as well as the current outstanding year in order to regain in active status. The Fees for 2005-2010 are given in Appendix 3. Members are classified as inactive if they have not paid their dues for 3 or more years. Only those Adhering Organizations with an active status can vote on IUGS matters; inactive Adhering Organizations can participate as observers. Each category of membership has been assigned a number of units that acts as a multiplier of the basic unit of the Membership Fee (Appendix 3). The value of the unit follows the inflation rate based on the US Consumer Price Index CPI.

ACTIVITIES OF IUGS

Activities related to IUGS in the office of the Secretary General during 2010 were similar in breadth to those of preceding years. The IUGS Bureau managed the day-to-day activities of the Union, and met on several occasions. The EC members of IUGS are now working smoothly and efficiently as they work through their 3rd year of cooperation. In 2010, IUGS worked aggressively to keep IGCP alive through issuance of communiqués and special meetings. The focus of all IGCP-related efforts has been to preserve the program, assist in the transition to a new identity and enhance IUGS presence and contribution towards the new IGCP.

IUGS continues to support the educational importance of the geosciences, for example through activities with IGEO, facilitating cooperation amongst individuals, organizations and groups involved in the promotion and preservation of our geological heritage.

"Corporate accountability" is maintained through the publication of the Annual Report and Minutes of the Executive Committee Meeting. These formal documents create a more professional and structured image to non-geologists and are welcomed by government politicians and bureaucrats, non-geological Organizations and societies. In 2011, the Annual Report for 2010 was released as a digital file downloadable on the IUGS homepage.

The distribution of electronic Bulletins to its Adhering Organizations, scientific bodies and Affiliated Organizations has been widely lauded. These short, informal "news bites" briefly convey recent activities and accomplishments within the Union and are meant to keep others abreast of changes and events in the community at large. A large full-colour panel display highlights IUGS' journal, Episodes, and the many activities and Affiliated Organizations in IUGS.

Collectively, the accomplishments and efforts summarized above indicate that the Executive Committee is proactive and striving to meet the demands and needs expressed by the members. Great achievements have been made in the past few years, although much more work and time is required to fully benefit from these changes. We trust that those who have experienced any of the above support our philosophy.

PERMANENT SECRETARIAT

The Permanent Secretariat, which has been generously funded by the United States Government, is based at the Headquarters of the U.S. Geological Survey, in Reston, Virginia, near Washington, D.C., USA (Appendix 1). The Secretariat is very important for the day-to-day operations of the IUGS, distributing to and collecting/collating documents from the Adhering Organizations and affiliated members. The Permanent Secretariat is also responsible for IUGS archives.

USGS Headquarters, Reston, Virginia

Reports from the Executive Committee

ICSU UPDATE

Alberto Riccardi
IUGS President
2008-2012

The International Council for Science (http://www.icsu.org), formerly known as the International Council of Scientific Unions (ICSU), was founded in 1931 to be the umbrella organization for the different unions in each scientific discipline. There are now almost 30 of these, including the eight Earth science related unions (informally called the GeoUnions): the International Union of Geological Sciences (IUGS), the International Union of Geodesy and Geophysics (IUGG), the International Geographical Union (IGU), the International Union of Soil Sciences (IUSS), the International Union for Quaternary Research (INQUA), the International Astronomical Union (IAU), International Union of Radio Science (URSI) and the International Society for Photogrammetry and Remote Sensing (ISPRS). Much of ICSU's funding comes from its national members that are commonly the National Academy of Sciences for a given country.

Together with its' unions, ICSU acts as the main representative and facilitator of international science. ICSU serves the scientific world and the general public in several areas:

1) Forming standing scientific committees that cross union disciplinary boundaries in order to encourage research and scholarship in those areas that require a multidisciplinary approach.

2) Acting as a lighthouse in the enforcement of freedom of access for all scientists to international meetings, workshops, and visits; and listing behavioural standards of scientific ethics.

3) Capacity building, especially in developing countries, by working with its unions to ensure that scientists in less developed countries are included in projects, made aware that they can contribute.

4) Issuing position statements on topics that are controversial to some, but in which scientists have a firm opinion.

5) ICSU increasingly finds UNESCO as a partner in such activities. These large meetings show the decision-makers and the press the increasing relevance science has in addressing today's problems.

The relationship of IUGS with ICSU is very important. The basis for the international geo-scientific organizations to be affiliated to IUGS is that IUGS can represent them in ICSU. The strength of IUGS as a member of the International Council for Science (ICSU) is its' broad coverage of geoscience fields under one umbrella, and its function as a forum for geoscientists acting to exchange ideas, develop scientific standards, and for the communication of geoscience information. Our links with other ICSU unions complies with the Mid-Term Vision and Strategic Action Plan for the International Union of Geological Sciences (http://www.iugs.org). IUGS is uniquely positioned to challenge and promote and organize the world geological community to address the global research problems that require the collaboration of many disciplines as well as many countries. The challenge is to be prompt and organize the global geoscience community and find socially and scientifically relevant and challenging collaborative projects.

During 2010 IUGS had important interactions with ICSU on topics covering a broad spectrum of scientific and organizational topics. The Union participated in an ICSU foresight analysis conducted on key drivers that could influence international science over the next 20 years. IUGS also collaborated in ICSU's survey on activities and experiences in science education. Joint reviews of ICSU regional offices for Asia and the Pacific, and for Latin America and the Caribbean were completed in 2010, supporting the Report by the Ad Hoc Group on Weighted Voting, answering the survey "ICSU consultation on Energy", commenting on a proposed revision to ICSU statute 5 – the Principle of Universality. IUGS also participated in a meeting of ICSU International Scientific Unions held in Paris in April and in the 5th Electronic General Assembly on behalf of ICSU accounts. ICSU grants were awarded to IUGS-supported projects of the International Permafrost Association (IPA) and International Union of Geodesy and Geophysics (IUGG) in 2010. IUGS also supported two ICSU grant applications by ICSU's Committee on Data for Science and Technology (CODATA) and the IUGG.

IGCP UPDATE

Peter Bobrowsky (IUGS Secretary General)

During the period 2010-2011, the International Geoscience Programme continued to operate under the recently defined focus of five thematic funding targets: 1) Resources; 2) Global Change and Evolution of Life; 3) Geohazards; 4) Water; and 5) Deep Earth. Each theme comprised between 6 and 9 virtual specialists including one "theme leader" charged with evaluating existing and new in-coming research proposals.

In 2010 there were 31 active IGCP projects (21 of these obtained funding and the remaining 10 projects with no funding but on extended term status). At the moment the IGCP is working under the conditions recommended by IUGS; namely maintaining about 30 active projects per year. The IGCP Scientific Board evaluated 8 new project proposals. All 31 active projects are currently listed on the IUGS website under "LINKS" with the appropriate hyperlinks to the individual project websites where available.

TREASURER'S REPORT

William Cavazza (IUGS Treasurer)

The main income of IUGS consists of the annual fees of the Adhering Members and of earmarked contributions to the main scientific programmes, such as the IGCP and the GARS, which come from UNESCO. Other sources of income during 2010 have included the Organizing Committee of the 34th IGC Brisbane (advance payment on capitation fee) and the Geological Society of London (publication royalties). The biggest expenses are dedicated to the IGCP and to the Committees, Commissions, Task Groups and Initiatives of IUGS. A few of the IUGS Affiliated Organisations are supported with some seed money, particularly to enhance international cooperation and involvement of participants from developing countries. Financial details can be seen in Appendix 4. Further information can be obtained from the more comprehensive financial report regularly published in *Episodes*. The most recent, for the year 2010, was printed in *Episodes*, Vol. 34/2.

IUGS expenditures often do not reflect the real costs. For example, the IUGS Secretariat is parity sponsored by IUGS and graciously hosted by the United States Geological Survey in Reston (Virginia, USA). The same holds true for *EPISODES* as our annual contribution for editing, lay-out, printing, and distribution, covers only a part of the actual costs incurred by the Geological Society of India which hosts the journal. The costs related to IUGS meetings are covered, at least in part, by the countries hosting such meetings and for a very substantial part by the parent organisations of the Bureau members (President, Secretary-General, and Treasurer and their supporting staff) which cover salary and all or part of their travel costs. These forms of support save IUGS a considerable amount per year. IUGS is grateful to the Argentinian, Canadian, Indian, Italian, and U.S.A. governments for their generous support that enables the Union to invest significantly more in science development than would be otherwise possible.

IUGS Adhering Organizations

Compared to 2009, the number of Adhering Organizations paying their dues decreased. There are a total of 121 Adhering Organizations: 87 active (7 pending), 34 inactive. In 2010, two Category 1 countries, Guyana and North Korea (PDR), were reinstated into Active Status; and India upgraded from Category 5 to Category 7.

2004-2010 Membership Trends

ACTIVE	INACTIVE	TOTAL
87 (94 in 2009) (94 in 2008) (88 in 2007) (83 in 2006) (77 in 2005) (79 in 2004)	34 (27 in 2009) (25 in 2008) (30 in 2007) (35 in 2006) (40 in 2005) (37 in 2004)	121 (121 in 2009) (119 in 2008) (118 in 2007) (118 in 2006) (117 in 2005) (116 in 2004)

IUGS Publications and Outreach

The IUGS Publications Committee (PC) reviews the publication policy of the Union and of its Commissions, giving particular attention to the IUGS journal Episodes. The PC examines all applications to the Executive Committee for funds involving publication, and advises on publication standards, methods and techniques in the presentation of geological results.

E-Bulletin

The IUGS Bulletin is issued monthly and reaches 12,000 people worldwide. IUGS publishes in the E-bulletin on behalf of affiliate members and is compiled by IUGS Councilor Colin Simpson.

Episodes

Volume 33 (four issues) of *Episodes* was published in 2010. The impact factor of the Journal has increased significantly to 2.16. A total of 42 manuscripts were received in during 2010. More than 10,000 visits have been made to the web site in 2010 (www.episodes..co.in)

The Geological Society

Special Publications

The Geological Society of London (GSL) publishes books produced by IUGS. Books are published with both GSL and IUGS logos.

Website

The IUGS Website (http://www.iugs.org/) is populated and updated on a daily basis. The website is a vehicle to reaching many nations in 88 different languages and 50 percent was English. The website remains IUGS' most critical modern link to the outside world. The website is managed by the IUGS Secretary General Peter Bobrowsky.

Fred Spilhaus
(Chair, IUGS Publications Committee)

Mulappa Jayananda
(Episodes Editor)

Scientific Activities of IUGS

The Union is scientifically active through a series of Committees, Commissions, Task Groups and Initiatives. IUGS is also active with UNESCO, through IGCP and in the Geological Applications of Remote Sensing (GARS) and the Mineral Resources Sustainability Project (MRSP) programmes. IUGS also collaborates with ICSU and IUGG in the Scientific Committee for the Lithosphere (SCL), which co-ordinates the International Lithosphere Programme (ILP). In these programmes, IUGS provides both financial support and scientific input. The results of these research activities are not only widely published, but also form a major part of the programme at the quadrennial IGC.

IUGS Committees

Ad hoc Review Committee (ARC)

Following the recommendation of the Strategic Planning Committee, the Executive Committee has made strenuous attempts to institute reviews of as many of the Commissions and scientific bodies run by the Union as possible, during their term of office. In 2010, there were *Ad hoc* reviews of the IUGS Commission on Geoscience for Environmental Management (GEM), the International Lithosphere Program (ILP) and Taskforce on Global Geoscience Workforce (TGGW).

Finance Committee (FC)

The FC is tasked with identifying outside funding and proposing ways to improve IUGS financial operations, including the allocation of funds in relation to the strategic priorities and missions adopted by the EC, auditing IUGS finances and presenting reports to the IUGS Council every four years before the election of a new EC. The members of the Finance Committee are Antonio Brambati (Chair), Pat Leahy and Zdenek Johan (Members).

Nominating Committee (NC)

The Nominating Committee is responsible for making nominations for the positions on the Executive Committee. Following the Statutes and Byelaws of IUGS, a new Nominating Committee was appointed at the last IUGS Council Meeting in Oslo. The Committee is to recommend a slate of candidates for officers of the Union for the next term of IUGS Executive Committee. The members of the Committee are Zhang Hongren, (Chairman, China), Ryo Matsumoto (Japan), Centeno-Garcia Elena (Mexico), Peadar Mc Ardle (Ireland), Jonas Satkunas (Lithuania), Felix Toteu (Cameroon) and Marita Bradshaw (Australia). The Nominating Committee will start its work mainly after the half way of the current term.

Publications Committee (PC)

The committee now consists of the following members: Fred Spilhaus (Chair, USA), Susana Damborenea (Museo de La Plata in La Plata, Argentina), Jayananda Mudlappa (Episodes Editor, Delhi, India), Zhenyu Yang (Chinese Academy of Sciences) and Michael Thomson (UK).

Strategic Planning Committee (SPC)

The SPC was appointed in 2009 and began work at the beginning of 2010. The Strategic Plan will be available in time to send out to council members well in advance of Brisbane Conference in 2012. The plan will be ready for approval or rejection by next the 63rd EC meeting in February 2012. The members of the Strategic Planning Committee are Attilio Boriani (Chair), Kristine Asch, Jacques Charvet, Peter Cook, Stan Finney, Ochir Gerel, Gary Lewis, Kevin Telmer and Umberto Cordani (Members).

IUGS Commissions

Commissions undertake the main scientific work of the IUGS. Normally, a Commission lasts for two to three terms (4 years per term), after which it either regroups as a new Commission or is terminated.

Commission for Geological Education, Training and Technology Transfer (COGE)

Spurred by the Executive Council's decision to develop a Commission on Education, Training and Technology Transfer, much effort was spent in developing such a body. COGE began assisting the International Geoscience Education Organization (IGEO) in undertaking a worldwide survey of the state of earth science education in schools and outreach education.

Member activities in 2010 included involvement and support of the IGEO GeoSciEdVI Conference in Johannesburg, South Africa and the 4th International Earth Science Olympiad in Indonesia. The Commission continues to work with the International Geoscience Education Organization (IGEO) to undertake a survey of the status of Earth science education in schools internationally. COGE is also involved in the development of an Earth science literacy document to

assist developing countries in adopting their own literacy document and as a teaching syllabus. Website development continued with the development and management of the COGE website (http://www.iugscoge.com).

Commission for Geoscience in Environmental Management (GEM)

GEM aims to provide guidance to geoscientists on how best to integrate geoscience into environmental policy and to communicate the concepts to potential interest groups such as policy makers, politicians, environmental Organizations, scientists from other disciplines, and the general public. GEM builds on the excellent work of the former Commission on Geological Sciences for Environmental Planning (COGEOENVIRONMENT) that completed its full term. GEM comprises 16 officers from 14 countries, with a full participation by a number of developing countries. GEM has developed its Terms of Reference, and has attained precise objectives reached through Working Groups. Of special interest is the working group on International Borders-Geoenvironmental Concerns. Trans-boundary problems being a field in which international Organizations are highly necessary.

Commission on the Management and Application of Geoscience Information (CGI)

The aims of this Commission are to provide the means for exchanging knowledge on geoscience information and systems, to support the dissemination of best practices in geoscience information applications, to encourage the development of geoscience standards, to keep IUGS informed on geoscience information matters and to help bring interested bodies and persons together. CGI has well defined objectives and action plans, the leadership and council are dynamic and representative, outreach is excellent (flyers, website, etc.), and working groups are active. Currently the Commission has 243 members in 66 countries

In 2010, CGI worked to promote geosciences through students with a workshop in Berlin focusing on geostandards, geoinformation and geoeducation. CGI continues to strengthen its connections with the Open GeoSpatial Consortium (OGC www.opengeospatial.org) a non-profit, international, voluntary consensus standards organization that is leading the development of standards for geospatial and location based services. OGC comprises 365 companies, government agencies, and universities participating in a consensus process to develop publicly available interface specifications. CGI regards the OGC is the most relevant geoservice standardization body today, and it is actually driving the field. Visit the informative website at: http://www.bgs.ac.uk/cgi_web/welcome.html

International Commission on the History of Geological Sciences (INHIGEO)

INHIGEO, a commission of both IUGS and the International Union on the History and Philosophy of Science (IUHPS), has 218 members in 46 countries (22 elected in 2008), and 9 Honorary Senior Members. The overall objectives are to study the history of geological sciences and publication of works on this subject fit within the stated objectives of IUGS. The Commission attempts to be involved with other international projects such as the IUHPS. INHIGEO meets usually once each year to conduct a major symposium on the history of geology, produce an annual Newsletter and work with various publishing houses and journals, including Episodes. The task of INHIGEO is to promote studies in the history of geological sciences through symposia and publications.

INHIGEO had another successful year as evidenced by recent publications and the organisation of its annual conference in July 2010 in Spain. Ongoing communications were facilitated via a dedicated INHIGEO website that is regularly updated and includes a copy of 2010 INHIGEO newsletter in pdf format. Planned activities for the next two years include symposia in Japan, 2011 and Australia in 2012, and sponsorship of two other meetings.

International Commission on Stratigraphy (ICS)

This Commission (http://www.stratigraphy.org) is charged with the important and complex task of establishing global stratotype sections and points (GSSPs) for the complete Earth's history. The ICS promotes and coordinates long-term international cooperation in a number of other related stratigraphic topics, is the largest and oldest body within IUGS. It comprises fourteen Sub-commissions on Stratigraphy that determine where to fix the GSSPs defining the base of the Systems, Series and Stages (and thus the boundaries between) in the geological time-scale that comprise the stratigraphic column.

Nearly all Sub-commissions of ICS publish regular newsletters or circulars of a high scientific calibre. ICS receives very little financial support from sources other than IUGS. In 2010, the ICS successfully ran a major meeting in Prague, a GSSP workshop, and new sub-commision chairs were introduced. Work on the Geologic Map of the world and International Stratigraphic Chart also continued. During 2010 two GSSP were approved by the ICS. The base of the

Hettangian Stage (Triassic-Jurassic boundary), ratified by the IUGS EC, and the base of the Lutetian Stage (Eocene Series). ICS subcommissions approved the GSSP proposal for the base Santonian Stage, the GSSOP and name of the Jiangshanian Stage (Cambrian).

Commission on Tectonics and Structural Geology (TecTask)

The highlight of 2010 was the elevation of TecTask to an IUGS commission on Structural Geology and Tectonics. The year saw an increase in the numbers of registered members to more than 1200 (850 in 2009). Completion of the Commission board is on the way: In addition to the Executive Committee, 8 officers are appointed; 7 candidates are considered for appointment, which should be achieved in the first quarter of 2011. Two candidates for the Junior Officer position are being considered.

Activities are published in the Journal of Structural Geology. The main achievements in 2010 included an extension of focus areas from Africa into Asia, with support of the formation of national groups and regional meetings. Besides the Internet exposure, TecTask was presented to the Public in three conferences within USA in 2010. The Outcropedia initiative, and investment in knowledge sharing events was also a focus of attention. TecTask is also developing standards and databases: the Glossary of Tectonics, launched in 2006, will be transformed into a Wikipedia-like glossary of terminology.

A new initiative for 2010 is the development of a Geoheritage network dedicated to preservation of sites significant for structural geology; the first target is Cap de Creus. TecTask is collaborating with several groups or societies as it seeks collaboration with World Heritage and GeoPark programs.

IUGS Initiatives

GeoHeritage

IUGS supports the concept of GeoHeritage. The Secretary General is primarily responsible for all GeoHeritage issues for the Union, except for representation in the Bureau of UNESCO's Global GeoParks Network (GGN) by Councillor Colin Simpson, and the European GeoParks Network (EGN) by Vice President Jacques Charvet.

Geoparks have a role to play in counteracting the decline in interest in geosciences for students. Geopark management must acknowledge and cater to the different users of the parks, to ensure that there is appropriate access to geological sites for professional and practicing geologists as well as for visitors. Their needs are significantly different. Geopark interpretive materials (maps, signs, trails, brochures, etc) need to be improved to include geological information in an engaging manner as well as good photos and diagrams to facilitate the learning process for non-geoscientists. The development, sustainable and appropriate management of Geoparks should form part of a larger global move towards environmental and cultural awareness and sensitivity to the whole of society's role in the planet earth. There is a real sense that the time is right for Geoparks, and individuals are encouraged to use the Geopark Network guidelines for the development of existing and proposed Geoparks.

IUGS also has a MoU with the International Union for Conservation of Nature (IUCN) to evaluate new GeoHeritage proposals that relate to UNESCO World Heritage site status. IUCN provides a list of sites that have geological components and IUGS has to provide a technical report. IUGS readers are only one group of 10 sets of reviewers.

IUGS Task Groups

Task Group on Geoheritage

This affiliated group became active in 2010 and participated in several meetings in order to reinforce links to other organisations, i.e., ProGEO's 6th International Symposium, held in cooperation with the 14th Annual Meeting of the Geoheritage Section of the German Society for Geeosciences in Hagen, Germany (May-June, 2010). A new regional working group was formed in southwest Europe and their first meeting will be held in September 2011 in Caravaca de la Cruz, Spain. The regional group of south eastern Europe held a meeting in Elazig, Turkey on September 2010.

Task Group on Global Geochemical Baselines (TGGGB)

The principal aim of this Task Group (http://www.bgs.ac.uk/iugs/home.html) is to prepare a global geochemical database, and its representation in map form, to document the concentration and distribution of chemical elements and species in the Earth's near-surface environment. The database and accompanying maps can then be used to create a geochemical baseline against which future human-induced or natural changes to the chemistry of the land surface may be recognised and measured. The Task Group is organized with a Steering Committee and an Analytical Committee. The nine people involved represent five countries; all of them are from North America or Western Europe.

The main issue in 2010 was a lack of funding to achieve the objectives of the project at the global scale. The geochemical baseline project in Europe was been completed with funding by the European Geological Surveys. The geochemical mapping project by the CCOP member countries has been delayed due to lack of funding by countries.

The 2011 priority will be the 2nd Arthur Darnley Symposium "*Global Geochemical Mapping: Understanding Chemical Earth*" at IGC 2012. The Task Group will also pursue opportunities within Africa and CCOP countries as funding permits. The revision of the FOREGS Geochemical Mapping Field Manual will be completed in 2011. The website is key to disseminate information. TGGGB will continue participation in symposia/conferences.

Task Group on Global Workforce (TGGW)

In 2010, efforts focused on the US Geoscience workforce. Forming a partnership between IUGS and UNESCO will provide adequate information on a global platform. Four major and 10 minor communication sessions were held. Challenges for 2011 include finding representatives from Russia, Latin America and SE Asia, and determining activities that span across regions and cultures. Work began on a directory of geosciences departments on a global scale that will be available in 2011.

Task Group on Isotopes and Geochronology (TGIG)

The goal of this Task Group is to formulate new, specific recommendations for isotopic decay constants, isotopic abundances, and uncertainties. The group is financially and morally supported by both IUGS and IUPAC. The decay constants that have been in use in the geological community for the last 22 years were endorsed and recommended by IUGS. However, recent analytical improvements have exposed potential problems with the 1977 recommendations. Critical to the success of the work of the Task Group is that its members were viewed by the entire scientific community as accomplished, recognized practitioners, rather than consumers, of radioisotope geochemistry and geochronology.

Currently, activity of the Group includes re-evaluation the major papers on half-lives that are used for the radiometric dating in order to assess the uncertainties caused by the usage of the "year" as a time unit. There was one meeting in 2010, in Brussels, and intensive e-mail communications among various members were held to discuss various technical details. The IUPAC-IUGS joint Task Group "Isotopes in Geosciences", TGIG, has evaluated the published measurement results for decay constants (i.e. half-lives) of 238U, 235U and 234U. A measurement result is generally expressed as a single measured quantity value and a measurement uncertainty.

Task Group on IUGS / IGC Statutes and Byelaws

Following the recommendations of the IUGS Strategic Planning Committee report in 2000, the IUGS-IGC Councils suggested that the Union and International Geological Congress (IGC) develop a much closer relationship. The IUGS Council and IGC General Assembly were officially combined in August 2004 at the 32nd IGC in Florence, Italy to provide a clear and simple representation of the global geological community through a unified body and a more effective management of both IUGS and IGC.

A special Task Group was formed to combine and "streamline" the existing statutes and byelaws for IGC and IUGS. The Task Group consists of Jacques Charvet and Eldridge Moores, appointed by the Executive Board of IUGS and Arne Bjørlykke and Ian Lambert appointed by the IGC Steering Committee; Pat Leahy was collectively appointed by IUGS and IGC as Chair since he had not previously held direct position in either IUGS or the IGC.

The Task Group is taking steps to address conflicting passages from the new Definitions, Statutes and Byelaws for IGC and IUGS.

IUGS Collaborative projects

Geological Applications of Remote Sensing (GARS)

Geological Applications of Remote Sensing (GARS) is a joint operation of IUGS and UNESCO and now involves 40 institutes and individuals from 28 countries, most from the developing world. The GARS programme contributes to the advancement of geological research throughout the world and the development of the understanding of the Earth system, in order to address problems of particular relevance to the welfare of the Earth's population. Currently, under IGOS, GARS is focussing on three of the five strategic issues identified by IUGS: Reducing the vulnerability of communities at risk to natural hazards (IGOS Geohazards Theme):

Managing resources in a sustainable and environmentally sound way (Groundwater Initiative) and Contributing to understanding of global environmental changes. The GARS Programme has a strong interface with other international projects and thus continues to enhance the visibility of earth science amongst the space agencies, inter-governmental UN organizations and world research programmes sponsored by the Group on Earth Observation's (GEO). Among others, the following activities were developed during 2010: a workshop was held January 2010 at UNESCO to develop a Roadmap for the GEO Geohazard Community of Practice (GHCP); contributed to Tasks under the Disasters Societal Benefit Area (SBA), moving toward Roadmap implementation, and interacting with the Global Earthquake Model at the Roadmap Workshop in Paris in January 2010 and in London on September 2010. The IGOS Geohazards Super-Sites initiative on natural hazards laboratories (operational in 2010) provided data for the Haiti and Chile earthquakes and developed an ongoing relationship with the GEO Secretariat.

Geological World Heritage

Collaboration between IUGS and the World Conservation Union (IUCN) on World Heritage Site Evaluation entered its fourth year in 2010. Through the auspices of IUGS, a voluntary service provides technical desktop evaluations of applications of proposed World Heritage sites by some 1000 geoscientists The IUGS and IUCN evaluate candidate applications for World Heritage status. A similar agreement and working arrangement also exists between IUCN and the IAG (International Association of Geomorphologists).

IUCN received 13 applications (cultural, natural and mixed sites) in 2010, for which they requested help from IUGS with six proposals. IUGS provided the names of 60 individuals of which 24 provided useful responses. The results of candidate site evaluations will not be known until mid-2011 when the World Heritage Committee results are made public.

Group on Earth Observations (GEO-GEOSS)

The GEO is a voluntary partnership of governments and international organizations. Membership in GEO is open to all member States of the United Nations and to the European Commission. GEO Members currently include 80 Governments, the European Commission, and an additional 58 intergovernmental, international, and regional organizations, with a mandate in Earth observation or related issues. Participating Organizations include, among others, ICSU and UNESCO (including the UNESCO-IUGS joint program GARS), as well as some ICSU GeoUnions. The GEO is coordinating international efforts to build a Global Observation System of Systems (GEOSS), with the aim or constructing a global public infrastructure for Earth observations that, like the Internet, will consist of a flexible and distributed network that connects users to existing data bases and portals and provides reliable, up-to-date and user friendly information. GEOSS is simultaneously addressing nine areas of critical importance to people and society: Disasters, Health, Energy, Climate and Biodiversity.

During 2010, IUGS has participated in a number of activities in, including the Seventh Plenary session of the Group on Earth Observations (GEO-VII), and in the Ministerial Summit, which took place in November at the China National Convention Centre (CNCC), Beijing: the summit was attended by representatives of 51 countries and 34 Participating Organizations. The Ministerial Summit assessed the GEO's progress over the past five years, evaluated past and future GEOSS implementation, agreed on a Data Sharing Action Plan, and adopted the Beijing Declaration prepared by the GEO 2010 Ministerial Task Force under the guidance of the Executive Committee and in full coordination with the Government of China. It was agreed to encourage the provision of data and information to emerging GEOSS initiatives, including (i) a global carbon observation and analysis system (including the Global Forest Observation Initiative) for addressing mitigation and adaption to climate change; (ii) the GEO Biodiversity Observation Network for monitoring and preserving biodiversity; and (iii) a global land cover initiative for understanding land use, land-use change and urbanization At the closing session of the Ministerial Summit, the IUGS Past President, Zhang Hongren, on behalf of IUGS President Alberto Riccardi, read a statement stressing IUGS connection and involvement with the Purposes and activities of GEO and GEOSS. It was also stated that the IUGS is fully supportive of the important efforts being done by the Group on Earth Observations (GEO) to access and apply Earth observations, and fully endorses the GEOSS Data Sharing Principles.

International Lithosphere Programme (ILP)

This program (http://www.sclilp.org), formerly the Scientific Committee on the Lithosphere (SCL), is a joint venture of IUGS and IUGG. It seeks to elucidate the nature, dynamics, origin and evolution of the lithosphere, through international, interdisciplinary collaboration. The Programme involves several hundred scientists from over 60 countries. A number of challenges face ILP, including the need to strengthen the connection between solid-earth and non-solid-earth aspects relevant to the lithosphere and vice-versa; bolster the profile and impact of lithosphere research and topics of societal relevance (i.e., energy and environment); attract young researchers by choosing topics and adopting integrated approaches;

promote training of young researchers on lithosphere studies; and to initiate dedicated programmes that address world-class problems.

In 2010, the different Task Forces and Coordinating Committees participated in many scientific events, including: the EGU General Assembly, AGU meetings, Goldschmidt Conference, several workshops, and the 2nd ILP Potsdam Conference. ILP has a number of Task Forces dealing with 3 general scientific themes, and 5 Regional Coordinating Committees. Three Task Forces ended in 2010; 5 continue with a broadened aim; and 5 are new. Also, 2 Coordinating Committees closed, 4 continue, a new one is created on northern Africa, and 2 more are planned for 2011.

OneGeology

The IUGS has been formally involved with OneGeology since October 2009. Since then IUGS main goal in relation to OneGeology has been to support not only its interaction with the IUGS Commission on the Management and Application of Geoscience Information (CGI), but also with other IUGS bodies and with the 34th International Geological Congress (Brisbane 2012). IUGS has identified as priority tasks: (1) to make an inventory of all geostandards sponsored by IUGS in the past; (2) to identify existing geostandards which could be endorsed by IUGS; and 3) to propose new geostandards for future development.

In 2010, the OneGeology Steering Group met at the Geological and Nuclear Sciences (GNS), Lower Hutt, Wellington, New Zealand, in April and held a teleconference in July 2010. BGS and BRGM will continue to provide supporting funding (secretariat and portal maintenance/development) until at least the next milestone for OneGeology, the 34th IGC. BGS has provided nationwide coverage of 1:50,000 scale map data and the new 1:50M scale CGMW map of structural elements has been added. Work is also progressing on options to select by 'region' rather than country.

OneGeology has established strong linkages with over ten regional and global organizations that have pledged their support. OneGeology has become more closely involved with GEO/GEOSS (Global Earth Observations), providing geological map data. OneGeology and Geoparks have set up a MoU and a series of new web links and pages. Outreach and the role for information on geological maps is an important part of the development of the OneGeology portal. Additionally, closer links with Geoparks and the YES Network (Young Earth Scientist) were established in 2010.

Organizations Affiliated with IUGS

American Association of Petroleum Geologists (AAPG)

AAPG aims to foster scientific research, to advance the science of geology, to promote technology, and to inspire high professional conduct, aims that still guide the Association today. It is currently one of the world's largest professional geological societies with a membership of over 32,000 of which over 4,000 are students; and over 30% of the membership works in the international arena. AAPG, together with sister organizations, is setting up branch offices around the world to better serve these members.

AAPG provides publications, conferences, and educational opportunities to geoscientists and disseminates the most current geological information available to the general public. AAPG's GIS Upstream Digital Reference Information Library (GIS-UDRIL) is now one of AAPG's most sought after products. AAPG is also a major player in the Geoscience World; and the publications aggregate now investigating the feasibility of publishing all key geoscience journals electronically. AAPG supports a code of ethics for professional geologists to assure employers and clients of the integrity of its members. Officers guide the Association and a House of Delegates is elected annually. The organization's programs are administered by an Executive Director and staff which are located in Tulsa, Oklahoma. Visit the Website at: http://www.aapg.org

American Geological Institute (AGI)

The American Geological Institute is a non-profit federation of 44 geoscientific and professional associations representing over 100,000 members. It aims to voice the shared interests of the geological profession. In addition, it plays a major role in strengthening geoscience education and societal awareness. AGI's geoscience database GeoRef has reached 2.9 million references to become the world's largest and most comprehensive on geoscience. AGI also participates in GeoScience World (GSW), an integrated system of dozens of journals and GeoRef. The fifth edition of the Glossary of Geology (40,000 terms) is available online, including Spanish equivalents for many terms. AGI participates as a member of the IUGS CGI Working Group for the Multilingual Thesaurus of Geosciences. AGI also organized the ninth annual Earth Science Week, together with the USGS, NASA, NOAA, IRIS, the AAPG Foundation, and the National Park Service.

AGI is heavily involved in the support of teaching of earth science at the primary and secondary school level, and of popularization of earth science through television and films. It annually sponsors Earth Science Week. Activities include revamping the academic associates program.

American Geophysical Union (AGU)

AGU helps to promote the development of Earth science worldwide and seeks to assure that the increasing understanding of the Earth is taken into account in formulating public policy. It is an active Union with over 54,000 members ranging from geologists to astrophysicists. AGU is self-supporting although some grants, primarily from U.S. government agencies, to support special limited-term projects are also obtained. AGU is formally related with ICSU activities through the START Secretariat, an ICSU/IGBP activity that operates under AGU's umbrella in Washington, DC. AGU and IUGS cooperate and complement each other in achieving common objectives. Both promote the development of the earth sciences worldwide. AGU assures that the increasing understanding of how Earth works is taken into account in formulating public policy and is used to the benefit of the world's citizens. AGU also interacts with IUGG. All AGU journals are now fully electronic and their publication is faster than at any time in the past 15 years even as more pages are being published. A portion of a new AGU publication, Space Weather, is available on the web free at **http://www.agu.org**.

Arab Geologists Association (AGA)

Arab Geologists Association, founded in 1975 and based in Baghdad, is a union of professional scientists that does

not interfere in political affairs and religious beliefs. The AGA represents geological bodies in Arab countries, and is working to raise the level of Arab geologists morally and financially through the exchange scientific information and experience in various professional and technical fields at national and international levels. On an annual basis, the AGA helps to organize seminars, conferences and fieldtrips that focus on geological research in Arab nations. AGA has a significant role in promoting IUGS visibility in Arab countries.

Association of Applied Geochemists (AAG)

The Association of Applied Geochemists (formerly the Association of Exploration Geochemists - AEG) specializes in advancing the science of exploration and environmental geochemistry and furthering the interests of both geochemists and geochemistry by encouraging research and development and the distribution of scientific information. The new name better reflects its scope and its membership. It had an active membership about 500 during 2008. The Association has a ten-member Board of Councillors and Regional Councillors outside North America representing the southern Africa, Brazil, Chile, southern Asia, China, United Kingdom and Republic of Ireland.

The Association sponsors the publication of the journal Geochemistry: Exploration, Environment, Analysis in partnership with the Geological Society of London, and publishes a quarterly newsletter, Explore, which is distributed throughout the world and contains timely articles on a variety of applied geochemistry topics. The Association also produces special publications and conducts short courses on topics of concern in the fields of applied geochemistry. Visit the Website at: **http://www.appliedgeochemists.org/**

Association of African Women Geoscientists (AAWG)

In 2010, the number of countries represented in the AAWG increased from 26 to 32 countries, including non-African nations. The AAWG published the second issue of its newsletter entitled "Women & Geosciences News" and organized the 5th biannual conference entitled "Women and Geosciences for Peace" at Grand Bassam (Côte d'Ivoire). During this conference, new scientific cooperation was established between the Geology Department of the University of Tunis, El Manar (Tunisia) and the University of Cocody (Côte d'Ivoire).

To promote the African Geoparks Network, the AAWG and AGN are organizing, in collaboration with the UNESCO Cairo Office, the 1st International Conference on African and Arabian Geoparks for 2011 in Morocco. The AAWG and AGN are also organizing a panel discussion session entitled "Role of geoparks in promoting Earth Sciences and their importance in the society" during the 6th Science Centre World Congress, in Cape Town, South Africa in September 2011.

Association of European Geological Societies (AEGS)

The Association currently has 30 members from 29 countries. Membership to AEGS is open to all non-governmental societies, institutions and organizations in Europe active on a country wide scale in geology or earth sciences. Since 1975, AEGS has helped in the organization of the biannual meetings: MAEGS (Meeting of the Association of European Geological Societies). In this way the association serves as a "clamp" for European geological sciences, especially on the level of the national geological societies. Visit the Website at: http://aegs.org/aegs.html.

Association of Geoscientists for International Development (AGID)

AGID operates as a decentralized organization with autonomous national groups in countries such as Bangladesh and Nigeria. The Association encourages communication between individuals, societies, agencies and corporations with interest in the application of geosciences to sustainable development and further encourages and promotes activities in geoscientific fields that are related to the needs of developing countries. The headquarters are in Bangladesh.

In 2010, AGID ran two pilot TEAM projects in Nigeria and Bangladesh to spread practical knowledge about geosciences and it's relevance to daily life of school children in low-income countries. Through the William Greenwood Scholarships program for Postgraduate Students, several modest scholarships were awarded to

support research fieldwork of postgraduate students in developing countries. AGID continues to lead the Working Group on Geoethics and the next meeting is scheduled for October 2011 to discuss preparations for the geoethics symposium at 2012 IGC. AGID is providing the Theme Coordinators for Theme 2: Geoscience in Low-Income Countries for IGC.

Association Pour l'Etude des Argile (AIPEA)

AIPEA is an old, well-established association, which has a well-defined scientific focus. The association has played an important role in promoting clay mineral research worldwide. It serves a small scientific field, which today is of considerable practical importance (for instance with the increased application in environmental science). The aim of AIPEA is the worldwide promotion of clay research and technology and to foster international cooperation in these fields. These aims are fulfilled by sponsoring international conferences, stimulating young clay mineralogists and by stimulating communications between clay researchers and clay technologists. The group, which has a large number of affiliated clay societies, runs two committees, on Nomenclature and on Teaching. The society offers an award to assist scientists attending the International Clay Conference.

AIPEA's efforts in 2010 were directed towards (i) attracting new clay societies to become affiliated to AIPEA (negotiations underway with the Tunisian Clay Society and the Chinese Clay Minerals Group) and (ii) the publication of the 1st monograph in the AIPEA Educational Series entitled Interstratified Clay Minerals – Origin, Characterisation and Geochemical Significance.

Balkan Geophysical Society (BGS)

This is a non-profit organization that unites the Geophysical Societies of the Balkan countries (Albania, Bulgaria, Greece, Romania, Serbia and Turkey).

The objectives of the BGS are to promote the application of geophysics, to foster the collaboration and mutual assistance between geophysicists of member countries. The BGS achieves its objectives through joint research projects, publications, congresses, workshops, courses, inviting lecturers. BGS is an associated society to EAGE, SEG, SPE and IUGS. Visit the Website at: http://www.balkangeophysoc.gr.

Carpathian Balkan Geological Association (CBGA)

The objective of this group is to promote and encourage joint fundamental and applied geological research, as well as training and specialization, in the Carpathian-Balkan realm. This concerns virtually all branches of the geological sciences (including geophysics), their environmental implications, and related disciplines. CBGA interfaces internationally with IGCP.
CBGA unites 14 collective members which are: Albania, Austria, Bulgaria, Czech Republic, F.Y.R. of Macedonia, Greece, Hungary, Montenegro, Poland, Romania, Slovakia, Slovenia, Serbia and Ukraine. Activity of CBGA is connected to IGCP and to the Central European Initiative (CEI). The major events of the CBGA in 2008 were the CBGA Council meeting in Thessaloniki (May 2008) and organizing a Committee of the CBGA Conference in Thessaloniki in 2010. The CBGA Council is planning to establish the official journal of the Association and the website.

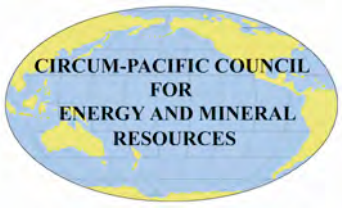
Commission for the Geological Map of the World (CGMW)

CGMW aims to promote, coordinate, publish and disseminate Earth Science maps at a small scale of continental and/or oceanic areas of the World. Geological Surveys or organizations responsible for national geological mapping of all countries and territories of the World are statutory members, whereas others interested groups are allowed to join as Associated Members.

In 2010, CGMW released the digital data of the 3rd edition of the Geological Map of the World, now presented in a DVD containing the GIS and complete databank of the map with French, English and Spanish. French and English versions downloadable at the CGMW website. A second edition of the Tectonic Map of Africa, at the scale of 1:10M, presented at the Congress on African Geology (CAG23) in Johannesburg in January 2011. Also in 2010, CGMW published the Magnetic and Gravimetric anomaly map of the Arctic: the result of a cooperative work between the geological surveys of Russia, the United States, Canada, Norway, Sweden, Denmark and Germany and scientific institutions.

CGMW also participated in seven meetings and contributed to Episodes.

Circum-Pacific Council for Energy and Mineral Resources (CPC)



CPC develops and promotes research and cooperation among industry, government and academia for the sustainable utilization of earth resources in the Pacific Region. The Council's goals include: improving knowledge of earth resources and damaging geologic hazards in the Pacific Region; increasing collaboration among geologists, hydrologists, biologists, oceanographers and related scientists; and disseminating earth-science information through maps, publications, symposia and workshops.

The CPC activities in 2010 concentrated on seafloor and coastal mapping within and around the Pacific Basin for the evaluation of resources and benthic habitat characterization. These activities included a GeoHab/CPC co-sponsored GeoHab Conference held in Wellington, New Zealand May 2010 and a Applied South Pacific Geoscience Commission's (SOPAC), Science, Technology and Resources (STAR) groups SOPAC/STAR/CPC special session on "Map Once, Use Many Ways" that took place in October 2010 during the last SOPAC Annual Session in Nadi, Fiji. Visit their Website at: http://www.circum-pacificcouncil.org/

Drilling, Observation and Sampling of the Earth's Continental Crust (DOSECC)

DOSECC is a not-for-profit corporation whose mission is to provide leadership and technical support in subsurface sampling and monitoring technology for addressing topics of scientific and societal importance. It comprises 54 Member Institution that provide input to a Board of Directors and President on promoting a coordinated and integrated continental scientific drilling program for the earth science community. Funding for drilling projects comes from numerous international sources, including the International Continental Scientific Drilling Program (ICDP) and various national scientific funding agencies (e.g., United States, Germany, Austria and Switzerland)

Since the late 1990's DOSECC has performed or provided expertise or drilling equipment to more than 35 scientific drilling projects throughout the world. DOSECC's chief accomplishments over the last five years include successful completion of many international drilling projects, design and manufacture of the Global Lake Drilling System (GLAD800), design and manufacture of a suite of soft sediment sampling tools allowing collection of deep sediment samples in lakes and marine environments, and increased interaction with the scientific drilling community. For the next five years, the Organization anticipates completion of many international drilling projects, and increase of education and outreach.

European Association for the Conservation of Geological Heritage (ProGEO)

ProGEO aims to promote the conservation of Europe's rich heritage of landscape, rock, fossil and mineral sites. It informs a wide public of the importance of this patrimony, its' relevance to modern society, and advising those responsible for protecting our Earth heritage. ProGEO organizes and participates in research into all aspects of planning, science, management and interpretation that are relevant to geoconservation. To involve all countries in Europe, ProGEO exchanges ideas and information in an open forum, and taking a full part in conservation in a global setting, including the formulation of conventions and legislation.

This affiliated group was very active in 2010, holding one central European meeting and three regional working group meetings. ProGEO's 6thInternational Symposium was held in cooperation with the 14th Annual Meeting of the Geoheritage Section of the Gterman Society for Geeosciences in Hagen, Germany (May-June). A new regional working group was formed in southwest Europe (leader is E. Diaz-Martinez) and their first meeting will be tied into the role of IGCP, scheduled for September 2011 in Caravaca de la Cruz, Spain. The regional group of southeastern Europe held a meeting in Elazig, Turkey in September, where a new leader from Romania was elected. The regional group for northern Europe also met in Gdansk, Poland. Three issues of the ProGEO news were produced in 2010 and the first volume with two issues (1/2 and 3/4) was published for the journal GeoHeritage. ProGEO applied for membership in the IUCN in 2010. UNESCO collaborates with ProGEO through GARS.

European Association of Science Editors (EASE)

EASE (http://www.ease.org.uk/) is a non-governmental and not-for-profit organization, registered in England and Wales, and operated exclusively for the advancement of science editing and educational purposes. Since 2000, it has been a Company Limited by Guarantee in the UK. Membership is just under 900 from 55 countries, with some 40 % of members from the UK and 15 % outside

Europe. EASE is an international non-governmental organization in a Category C relationship with UNESCO and Category A liaison with Technical Committee 46 of ISO (Information and Documentation Subcommittee 9; Presentation, identification and description of documents). The association was active in 2010 promoting improved communication in scientific journals. EASE is running strong international projects with UNESCO and IUBS (International Union of Biological Science), as well as IUGS.

European Federation of Geologists (EFG)

The EFG was established in 2009 and includes 20 country members. The main activities in 2010 were devoted to the implementation and management of EFG European Projects. GEOTRAINET, "Geo-Education for a sustainable geothermal heating and cooling market", is a European initiative for training and education of designers and drillers of geothermal heat pumps. The EFG is also involved in the EURO-AGES, "European Accredited Geological Study Programmes", developing Europe-wide quality standards and criteria for the assessment of higher education programmes in geology. Project TerraFirma is a Pan-European ground motion information service on several thematic areas: tectonics, flood and hydrogeology using satellite radar data. It is elaborated by ESA within the GMES Programme (Global Monitoring for Environment and Security) and started in 2003. The last three-year stage will end in 2012. A follow-on project involving the EFG: PanGeo, starts in 2011 for 3 years. EFG is also involved in the activity of panels of experts on: Geothermal Energy, Engineering Geology, Natural Hazards & Climate Change, Resources and reserves minerals and their sustainable use, Environmental Impact, Hydrogeology, CO_2 Geological Storage.

European Geopark Network (EGN)

Established in 2000, the European Geoparks Network (EGN) aims to protect geodiversity, to promote geological heritage to the general public as well as to support sustainable economic development of geopark territories primarily through the development of geological tourism. The network has drawn together territories from across Europe that share these aims and which are now working together in an active and dynamic way to achieve them. It constitutes the European branch of the Global Geoparks Network. Its affiliation with IUGS mirrors the closer cooperation between IUGS and the Global Geoparks Network through UNESCO.

Originally consisting of four territories, the network has, as of April 2010, been expanded to include 43 territories across 17 European countries. The network operates primarily by continuous electronic communication, frequent coordination meetings, annual conferences and the establishment of common projects through which territories can exchange ideas, experience and best practice thereby supporting each other to achieve common goals.

European Mineralogical Union (EMU)

EMU members are national scientific societies from European countries, including Russia, with only one member per country allowed. It is dedicated to furthering European cooperation in the mineralogical sciences (mineralogy, petrology and geochemistry) and supports conferences within Europe of a high scientific standing and of an international character. In particular, it supports the Experimental Mineralogy, Petrology and Geochemistry (EMPG) and the European Union of Geosciences (EUG) meetings. EMU is an active organization with an excellent track record in organizing Schools, co-sponsoring International Conferences, widely spread over Europe and annually awarding medals for Research Excellence in Mineralogy, Petrology and Geochemistry.

In 2010 EMU organized a school to understand solid solution and aqueous solution processes (*i.e.*, ion partitioning in mineral-water interactions) that are of fundamental importance to geochemical studies. EMU donated subscription of European Journal of Mineralogy to 56 institutional libraries facing serious financial difficulties mainly in Eastern Europe and Latin America.

Geochemical Society (GS)

The Geochemical Society encourages the application of chemistry to the solution of geological and cosmological problems. Its membership (around 3000 from about 45 countries) is international and diverse

in background, encompassing such fields as biogeochemistry, organic geochemistry, high and low-temperature geochemistry, petrology, meteoritics, fluid-rock interaction, and isotope geochemistry.

The Geochemical Society sponsors (jointly with the European Association of Geochemistry) the V. M. Goldschmidt Conference: a broad-scope conference covering all aspects of geochemistry and cosmochemistry. The Geochemical Society sponsors (jointly with the Meteoritical Society) the professional research journal "*Geochemica et Cosmochemica Acta*," as well as a quarterly newsletter "The Geochemical News," a quarterly newsletter which distributed to all members. In addition, the society publishes two book series, the Special Publications Series and, jointly with the Mineralogical Society of America, the Reviews in Mineralogy and Geochemistry Series. The Geochemical Society sponsors (jointly with the European Association of Geochemistry) the V. M. Goldschmidt Conference, a broad-scope conference covering all aspects of geochemistry and cosmochemistry.

Geological Society of Africa (GSAf)

This Society aims to promote the advancement of the geological sciences throughout the African continent by encouraging and supporting education, training, research, the establishment of national societies and local groups and the organization of conferences and other meetings. GSAf has now ca 600 nominal members from 35 African countries and 19 countries outside the continent. The Society does not directly implement scientific projects but continues to encourage members to take the initiative and become involved in international collaborative research. GSAf does not run its' own projects but is involved in bringing African scientists more actively into IGCP projects.

In 2010, the GSAf committee participated in activities organized by international organizations on the African continent. The GSAf contributed to the Seismotectonic map of Africa working group The GSA*f* partly sponsored 10 young Earth Scientists to attend the YES conference organized jointly with the 23rd Colloquium of the African Geology "CAG23" to be held in January 2011. CAG24 will be in Ethiopia in 2013. GSAf published 12 regional e-bulletins and was responsible of the scientific aspect of the African-European Georesources Observation System during its final stage in 2010. Visit the Website at:
www.geologicalsocietyofafrica.org

Geological Society of America (GSA)

The GSA is a broad, unifying scientific society, which aims to foster the human quest for understanding the Earth, planets, and life, catalyzing new scientific ways of thinking about natural systems and applying geoscience knowledge and insight to human needs and aspirations and stewardship of the Earth. There are now more than 20,000 members.

The 2010 Annual meeting was held in Denver, and Minneapolis will be host to the 2011 meeting. GSA continued to integrate associated societies more into their planning process and formally invited their associated societies to participate in setting GSA's future goals and direction. Visit the Website at
http://www.geosociety.org/

Geological Society of France (SGF)

The Geological Society of France is a non-profit association built in 1830. It is composed of 1100 members, 1600 subscribers for one of its publications. The SGF interfaces with worldwide projects by the participation in the Geoscience world aggregate.It publishes scientific results in a bulletin (6 issues per year) and various books, organizes scientific meetings, for scientists and a larger public. SGF is part of the French Federation of Geology and is merged with UFG (Union Française des Géologues). The Society plays an important role in the preservation of geological heritage. A critical milestone achieved during 2010 was the merging of three major French geological societies (SGF-UFG-CNFG).

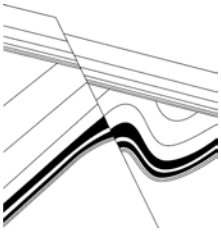
Geological Society of India (GSI)

The Geological Society of India (GSI) was founded in 1958 with the main objectives of promoting the cause of advancement in all braches of Earth Sciences in India by co-operating with other institutions with similar objectives. The GSI has some 1425 members, 683 Honorary Fellows and 10 Corporate Members. There is now a strong affiliation with the IUGS through the MOU formalizing the GSI editorial and production support to publish Episodes.

In 2010, all the four issues of Episodes were published on schedule, including Vol. 32, No. 2 (June 2009), No. 3

(September 2009), No. 4 (December 2009) and Vol. 33, No. 1 (March 2010). All back issues of Episodes have been uploaded in the GSI website. In addition, GSI published a monthly journal, including a Special Issue on Structural Geology, three text-books, and a popular book on Climate Change, organized a two international conferences, and five national seminars/conferences. An electronic version of the journal is being published under an agreement with Springer (India) Pvt. Ltd. GSI Chapters in Northern and Northeastern India developed a number of other geoscience-focused activities. The GSI continued with an important program of monthly meetings and lectures that provide a platform to young scientists, researchers, professionals and academicians to present their results of research. The GSI website (www.geosocindia.org), which is linked to the IUGS website, underwent significant improvements with a continuous updating of its database. Author and/or Subject specific retrieval of data from the Society's Journal since 1970 is easily obtained. The database is being developed through a project with funding from the Department of Science and Technology, which has been extended to 2011. The GSI continued to expand its Library in 2010, which at present is receiving 56 journals from different National and International Earth Science Organizations. The GSI helped organize two national conferences and a local seminar, and actively participated in a national meeting concerned with the conservation and scientific exploitation of mineral and water resources in India.

Geologische Vereinigung (GV)



Geologische Vereinigung has 1600 members in 64 countries; but its Executive Committee is almost entirely Germanic. GV promotes the Earth sciences within the framework of modern society; fostering understanding between individuals, organizations and institutions is regarded as being an important part of its role, which it undertakes through promoting Annual Meetings, short courses and excursions.

GV celebrated its 100-year anniversary on October 10, 2010. The 2010 annual meeting "Geosciences Secure the Future" was held in Darmstadt as a joint forum together with the Deutsche Gesellschaft für Geowissenschaften, the 8th European Coal Conference. Special support was provided to students to attend the meetings and the courses. The society publishes the *Geowissenschaftliche Mitteilungen*, a quarterly journal jointly edited with the other earth-science societies of Germany. GV also released in 2010 a new series entitled "Frontiers in Earth Sciences". Visit the Website at http://www.g-v.de/

International Association for Engineering Geology and the Environment (IAEG)

The IAEG is devoted to the investigation, study and solution of engineering and environmental problems, which may arise as the result of the interaction between geology and the works and activities of man as well as to the prediction and the development of measures for prevention or remediation of geological hazards. IAEG is a worldwide scientific society with more than 24 associated members, and 3543 individual members in 55 National Groups.

In 2010 the Association cooperated with a number of other international bodies (IAH, ISRM, ISSMGE and GEMS) expects to cooperate with these groups on several topics including education and training, professional practice, sustainable use of underground space, ancient monuments, soft rocks and indurated soils. The IAEG continued to publish the successful Bulletin of Engineering Geology and the Environment with Springer and distributed a newsletter and ran 22 Commissions on a variety of subjects (one of which is Building Stones which is relevant to IUGS). Virtually every member country organized some sort of national conference on engineering geology in 2010. Visit the Website at http://www.iaeg.info/

International Association of Geomorphologists (IAG)

IAG was founded to promote and develop collaboration in geomorphology between nations; affiliation is via National Scientific Members. It is an extremely active scientific association with 39 national members. IAG runs a number of working groups and task forces, such as those on Arid Regions, Geoarchaeology, Large Rivers, Volcanoes, Geomorphological Sites, Sediment Budgets in Cold Environments, Rocky Coasts Geomorphology, Human Impact on the Landscape, Earth Systems, Geomorphological Hazards, Global Change and Geomorphology, Geomorphological Mapping and Planetary Geomorphology.

The Association also sponsors conferences and publishes scientific material. IAG's income is derived from annual fees paid by affiliated National Scientific Members and

from scientific publications royalties (e.g. Encyclopaedia of Geomorphology). Most of the income serves to run a number of working groups and to support training activities for young geomorphologists, mostly from developing countries. Changes in the IAG constitution now give member organizations from severely low income countries exemption from fees provided they submit annual report of their activities. IAG is very active in publishing, and they have a very positive approach to cooperation with other scientific bodies. There are now fifteen Working Groups, many with no financial support from IAG. There is some income from membership fees, but considerable income from book royalties (e.g. Encyclopedia of Geomorphology) and their website (www.geomorph.org) is extremely popular. IAG are actively seeking new members and will continue to promote geomorphology to young students. Publication with Wiley will continue. IAG has a long history of successful collaboration with IUGS. Visit the website at (http://www.geomorph.org/)

International Association of Geochemistry (IAGC)

The IAGC is a pre-eminent international geochemical organization with over 500 members, whose prime objective is to foster co-operation in, and advancement of, geochemistry in its broadest sense. They sponsor meetings and publications organised by Working Groups to study problems that benefit from international co-operation.

The IAGC was very active in 2010, with 5 working groups and involvement of all Councillors and ordinary members making a number of important changes to the IAGC and its method of operation. Conference support and sponsorship during 2010 included the 13th International Symposium on Water-Rock Interaction (WRI-13), in Guanajuato, Mexico. The IAGC also continued its presence and involvement in the GSA Annual Meeting in Denver, where, for the 15th consecutive year, the IAGC presided over the technical session "Sources, Transport, Fate and Toxicology of Trace Elements in the Environment". The IAGC also sponsored five technical theme sessions at this international conference. Publications in 2010 included contributions to the Association's monthly journal, Applied Geochemistry an a biannual Newsletter, available to its membership electronically or by regular mail. Summary of activities and news items in 2010 were included in the bi-monthly periodical, Elements. The IAGC has a new website (www. iagc-society.org) designed by the Business Office Manager and run through the IAGC Business Office and a server in Columbus Ohio. The website allows new users to join IAGC online and both new and renewing members to pay their membership dues, and subscribe to Applied Geochemistry online.

International Association on the Genesis of Ore Deposits (IAGOD)

The Association's principal objective is to foster cooperation in, and advancement of, geochemistry and cosmochemistry in their broadest sense by working with any interested group in planning symposia and other types of meetings related to geochemistry, by sponsoring publications on topics not normally covered by existing organizations; and by the appointment of Working Groups to study problems that require, or would profit from, international cooperation. IAGOD plays a vital role in ore deposit research, together with other bodies (SGA, SEG, IGCP), with whom they cooperate. It is noteworthy, how much is achieved by IAGOD with small financial contributions by its membership. Visit IAGOD at www.iagod.org.

International Association of Hydrogeologists (IAH)

IAH (**http://www.iah.org/**) aims to advance public education and promote research in hydrogeological sciences. IAH is an organization of more than 3750 individual members and 44 national chapters from over 135 countries. In parallel with the preparation for the World Water Forum, IAH continues in international partnership projects with UNESCO.

IAH continued its active participation with bodies with responsibilities for water management in the UN-system. With UNESCO the most significant are WHYMAP (Hydrogeological Map of the World). The major IAH event of 2010, the 38th Congress "Groundwater Quality Sustainability" held in Krakow, Poland, attracted 520 participants from 70 countries. In addition to this major event, IAH, through its Commissions and Chapters, organized and co-sponsored nearly 20 groundwater related meetings around the world. Tthe IAH Council also undertook a process of review and reform with the intention of significantly improving the Association's scientific activities. A new structure of commissions, networks and working groups will be established from

mid 2011 with stronger reporting requirements. The IAH publication, Hydrogeology Journal, published by Springer, has become one of the major cited international journals dealing with groundwater issues. It is in now completing its 18th volume and has 8 issues per year with a target of 2050 pages annually.

International Association for Mathematical Geology (IAMG)

This specialised Association aims to promote international cooperation in the application and use of mathematics in geological research and technology. This is done through the organization of meetings, field excursions and visits to centres of research and technology, through publications and through cooperation with other professional organizations. A Student Grants Programme supports graduate student research in broad areas of mathematical geology for the purposes of advancing the development and application of quantitative methods in the geosciences. The Association publishes Computers & Geosciences (now on-line), Mathematical Geology and Natural Resources Research.

In 2010, IAMG continued to promote, worldwide, the advancement of mathematics, statistics and informatics in the geosciences. This was achieved through the organization of meetings, field excursions and visits to centres of research and technology, through publications and cooperation with other professional organizations. A Student Grants Programme supports graduate student research in broad areas of mathematical geology for the purposes of advancing the development and application of quantitative methods in the geosciences. Scientific publication remains the primary function of IAMG and continues to account for much of their income. The Association publishes three well-known international scientific journals: Computers & Geosciences (Elsevier), Mathematical Geosciences (formerly Mathematical Geology) and Natural Resources Research (both with Springer). Visit the IAMG website at www.iamg.org/

International Association of Sedimentologists (IAS)

IAS (http://www.iasnet.org/) is a global association with ca. 1,750 members from 97 countries. The Association promotes the study of sedimentology through publications, discussion and comparison of research results, by encouraging the interchange of research through international collaboration and by favouring integration with other disciplines. The IAS homepage is regularly updated.

The IAS helped co-sponsor conferences and workshops in Switzerland, Argentina, and Bulgaria. The IAS published 7 issues of its journal *Sedimentology*, comprising 2,257 pages in total in 2010. The electronic paper handling of the journal is working smoothly. A Newsletter accompanies *Sedimentology*. The IAS homepage is regularly updated.

International Centre for Training and Exchange in the Geosciences (CIFEG)

The International Centre for Training and Exchange in the Geosciences (Centre International pour la Formation et les Echanges en Géosciences, CIFEG) promotes the exchange of geosciences between northern and southern hemisphere countries through supporting training and research programmes; essentially it aims to promote bilateral knowledge sharing. The group runs two main projects; PANGIS – Pan-African Network for a Geological Information System and SANGIS – South East Asian Network for a Geological Information System. Visit the Website at http://www.cifeg.org

International Consortium on Landslides (ICL)

ICL (http://icl.dpri.kyoto-u.ac.jp/) is involved with international coordination, exchange of information and dissemination of research activities and capacity building through various meetings, dispatching experts, developing a landslide database, and publishing its journal "Landslides". ICL's central activity is the International Programme on Landslides (IPL). The construction of the headquarter building of UNITWIN (university twinning and networking) was jointly conducted by ICL, UNESCO and Kyoto University. ICL has strong links to UNESCO and WMO: and is well supported by these UN organizations. Although it only has about 40 members, ICL has a broad international

membership with a strong bias in favour of Japan. There is considerable scientific focus, but minor attention to the public or education of young scientists. ICL holds annual Board of Representative meetings at which IUGS is always present. ICL regularly promotes the role IUGS plays in supporting the association.

International Federation of Palynological Societies (IFPS)

Currently, 22 societies are members of IFPS (http://www.geo.arizona.edu/palynology/ifps.html) and the number of affiliated palynological societies and members continues to increase. Through 2010, IFPS continued its normal activity such as producing the newsletter PALYNOS, updating the website, developing the new "World Directory of palynologists" and collecting membership dues.

International Geological Education Organization (IGEO)

This organization promotes education in the geosciences at all levels, works for the enhancement of quality in the international provision of geoscience education and encourages all developments that raise public awareness of the geosciences, in particular amongst younger people.

The Fourth IESO was hosted by Indonesia in 2010. Financial help from IUGS were used to support the attendance of delegates from the developing nations to attend various international initiatives conducted by IGEO.

International Medical Geology Association (IMGA)

The IMGA formalized the Association by developing and adopting a Constitution and By-laws in 2010. At the year's end, IMGA had about 300 paying members and 100 members who are in the process of paying. IMGA membership is worldwide, representing more than 55 countries.

The chief achievements of 2010 included publication of 2 newsletters and 3 e-newsletters by e-mail. The website (http://www.medicalgeology.org/) is updated at least every second week and expanded. Short courses were held in Ireland, Turkey and Portugal; courses are planned in China and Italy in 2011. IMGA participated in several national and international meetings, including the First International Symposium in Iran on Medical Geology, Medical geology at SEGH in Ireland, the XIII Congress of Toxycology and Chemical Security, Bogotá, Colombia, GEOCANADA 2010 Conference: Medical Geology Poster Display Calgary, Canada. Following the success of a one-credit Medical Geology class held at the University of Texas at Dallas (65 students), the Karolinska Institute in Sweden is now preparing for regular courses in medical geology for medical students. A web-based course in medical geology is in preparation and will be tested in 2011. IMGA has been deeply involved in Encyclopedia of Environmental Health, EEA, to be published by Elsevier. This was published 2010. In addition, IMGA had published papers on medical geology in a large variety of journals during 2010.

International Mineralogical Association (IMA)

IMA comprises 39 mineralogical societies or groups (one per country) with a limited number of individual memberships. Its activities are carried out by 11 commissions and working groups. The Association promotes exchanges amongst mineralogists of all nations by organizing events or publishing relevant literature. IMA is a very important organization and IUGS promotes the more intensive use of its expertise by other IUGS bodies and projects.

The 'Annual List of New Minerals and Changes in Nomenclature' is now available on the IMA website (http://www.ima-mineralogy.org/). The Outreach Committee continued to recommend and develop research activities, useful and educative outreach materials that will be used by IMA society members, mineralogists, and to a larger extent by Earth scientists including teachers. This will help the interest in Mineralogical Sciences and complementary Earth Sciences.

International Palaeontological Association (IPA)

IPA aims to promote and coordinate international cooperation in

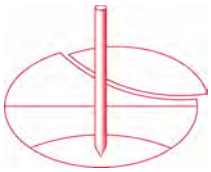
palaeontology and to encourage the integration and synthesis of all palaeontological knowledge IPA has some 1200 members and 19 corporate member organizations. There are about 160 individual subscribers for the Lethaia magazine which is authorized by IPA to collect membership dues as a component of each subscription.

The homepage contains a link to fossil collections of the world (http://ipa.geo.ku.edu/index3.html), to a very popular directory of palaeontologists and to a PalaeoLink databas. IPA actively uses the outreach potential of the Internet and the website experiences over 1000 hits a month. The Directory of Paleontologists of the World, the Directory of the fossil collections of the World, and the Paleolink Database make IPA an effective and dynamic organization. In 2010, the 3rd International Paleontological Congress was held in London from and over 800 scientists attended. The General Assembly of the IPA was convened at the Congress on July 1, 2010. Significant developments include the initiation of the Lethaia Foundation Public lecture and the establishment of the Palaeoparks project. The Palaeoparks project of the IPA aims to support local and international organizations that aim to conserve sites of significant paleontological interest. The project also calls for the designation of country representatives as well as the establishment of an IPA Committee to assess proposals for inclusion of sites in this program. IPA joined a consortium under the aegis of ProGEO in sponsoring the journal *Geo Heritage*.

International Permafrost Association (IPA)

IPA unites 12 corporate members from China, Czech Republic, France, India, Japan, New Zealand, Romania, Spain, United Kingdom and United States. The objectives of IPA (http://www.geo.uio.no/IPA/) include the dissemination of knowledge concerning permafrost and the promotion of cooperation between persons and organizations engaged in scientific investigations and engineering work on permafrost. Some 24 national/multinational organizations form the basis of the membership, although individual membership is possible if no national body exists. Ten working and three task groups covering a range of topics undertake scientific work for the Association; many of these are involved in collaborative work with a very wide range of international bodies, including IUSS, IPA, IGU, the International Commission on Snow and Ice, and with bodies within IGOS (GCOS/GTOS). The Association publishes Frozen Ground and contributed special issues to several other journals.

International Society for Rock Mechanics (ISRM)



The ISRM operates in the field of physical and mechanical behaviour of rocks and rock masses and the applications of this knowledge for the better understanding of geological processes and in the fields of Engineering. The IRSM website provides information about the association, its national groups, commissions and meetings. The group continues close co-operation with the Sister Societies IAEG and ISSMGE. The Society envisages planning and undertaking certain scientific activities with IUGS, such as the study of geological problems through ISRM Commissions, Joint Technical Committees and Interest Groups, a Federation of International Geo-engineering Societies and a Virtual Library.

The Association published News Journal and developed a web site. (http://www.isrm.net/). However, the increase of publication costs is becoming a serious issue. The ISRM is seeking to form a federation with the IAEG and ISSMGE. IRSM published proceedings, commission reports, a news journal, and their Blue Book in 2010.

International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)

The aim of the Society (http://www.issmge.org/home/) is to promote international co-operation amongst engineers and scientists for the advancement and dissemination of knowledge in the field of geotechnics, and its engineering and environmental applications. The ISSMGE is composed of 75 national societies and has over 17,000 individual members. The Society has 23 technical committees, which are asked to produce reports by 2009. A Newsletter of interest to the younger members will be re-launched soon. The main educational activity is the ISSMGE touring lectures (now renamed as ISSMGE International Seminar), delivered in less wealthy, developing countries such as Albania, Vietnam, Costa Rica, El Salvador, Indonesia, China, Hungary and Sri Lanka in 2010. As an overarching structure in this field, ISSMGE is doing important promotional activities in geotectonics.

Italian Federation of Earth Scientists (FIST)

Constituted in 1996, the FIST is an organization comprising the “Società Geologica Italiana” and “Società Italiana di Mineralogia e Petrologia”, together with the participation of almost twenty different Italian organizations covering different fields of the geosciences.

National Groundwater Association (NGWA)

The NGWA is dedicated to advancing the expertise of all ground water professionals and to furthering ground water awareness and protection through education and outreach. It has more than 12,000 members in 60 nations to advance the science and technology of the ground water professions. NGWA is supported by dues from individual and organizational members, and by income derived from its other activities.

In 2010, The Petroleum Hydrocarbons and Organic Chemicals in Ground Water® Forum was presented by NGWA in Las Vegas in December. NGWA offered its first virtual conference on Groundwater and Fractured Rock in October. NGWA's two technical publications, Ground Water and Ground Water Monitoring & Remediation, saw their impact factors increase. The IF for Ground Water is 1.831, an increase of more than 40 percent. The journal also improved its ranking among the 60 publications in the water resources category. The IF for Ground Water Monitoring & Remediation is 1.033, a slight increase over its previous IF (0.957). Ground Water Monitoring and Remediation is celebrating its 30th year of publication. Drafts of several NGWA best suggested practices are in various stages of development. Included are efforts toward aquifer storage and recovery, sustained yield in a hydrofractured well, managing brackish groundwater, inspection of water supply wells, and dealing with perchlorate in groundwater. In response to January's devastating earthquake in Haiti, NGWA advised the news media of NGWA informational resources related to earthquakes and groundwater/wells. NGWA was a major sponsor of the 2010 Canon Envirothon, North America's largest high school environmental education competition. NGWA organized its first annual "Protect Your Ground Water Day" in September to help meet a major organizational goal to "further water knowledge and protection through education and outreach." As part of Earth Sciences Week NGWA offered a Webinar focusing on women in the geosciences and intended to encourage others, especially women, to pursue a career in the groundwater industry.

Society of Economic Geologists Inc. (SEG)

This Society is an international body that is committed to excellence in science, discovery, documentation, interpretation, evaluation and responsible development of mineral resources and the professional development of its members. SEG formed a tripartite relationship with IAGOD and SGA, and also has a good working relationship with IUGS. Members are currently distributed through more than 80 countries worldwide. SEG is a leading international society in its field, and having co-sponsored meetings with many national and international Organizations, including UNESCO, indicates its relevance for important society issues. SEG is closely associated with IAGOD, forming an ICSU cluster.

SEG successfully continued a lecture program and awards for leading scientists and distinguished lecturers. Publications includes monographs, Guidebooks, including CDs, Compilation series (CD), Special publications, the Dummett DVD and other very popular series. The most popular digital publication is the Hugo Dummett Memorial Economic Geology Archive 1905-2004, available for all members. Visit the website http://www.segweb.org/

Society for Geology Applied to Mineral Deposits (SGA)

The SGA aims to advance the application of scientific knowledge to the study and development of mineral resources and their environment, to promote the profession and to improve and maintain professional standards.

Society for Sedimentary Geology (SEPM)

SEPM (**http://www.sepm.org/**) is an international not-for-profit Society dedicated to the dissemination of scientific information on sedimentology, stratigraphy, palaeontology, environmental sciences, marine geology, hydrogeology, and many additional related specialties.

In 2010, SEPM held its Annual Meeting in New Orleans jointly with AAPG. This is a major congress attended by several thoundans geoscientists every year. Both SEPM technical journals continued having excellent years. The Impact Factors for both journals increased again. With online science journal access being the preferred mode by many scientists and students, SEPM and its journals continued to play an important role, as a founder and current board member of the geoscience online journal aggregate, GeoScienceWorld GSW), which continues to thrive. *JSR* is part of the GSW and AAPG-Datapages, while *PALAIOS* is part of GSW, BioOne and JSTOR online aggregates. The Special Publications of SEPM continue to produce top of the line products. In 2010, a total of

four new books were published. One of the biggest accomplishments was the final digitization and CD production of all of SEPM past book publications, including some 150 books. SEPM held two research conferences in Denver and the Petrified Forest National Park. SEPM also began working on digitization of the entire production of the society that will be available in the next three years.

The Meteoritical Society (MS)

The Society, founded in 1933, promotes research and education in planetary sciences, with an emphasis on studies of meteorites and other extraterrestrial materials that further the understanding of the origin of the solar system. The society has around 950 members in 37 countries. The Society publishes its own journal, Meteorites and Planetary Sciences and also the Meteoritical Bulletin. Members donated ten subscriptions of the former journal to libraries in countries where the journal is unavailable. The Society publishes *Geochemica et Cosmochemica Acta*, together with the Geochemical Society. Visit the Website at: http://www.meteoriticalsociety.org/

Appendices

APPENDIX 1

IUGS – Executive Members and Meetings

EXECUTIVE COMMITTEE OFFICERS OF THE IUGS IN 2010

President	Prof. A. Riccardi	Aug. 2008 – Aug. 2012	riccardi@museo.fcnym.unlp.edu.ar
Past President	Prof. Z. Hongren	Aug. 2008 – Aug. 2012	iugs8@yahoo.com
Secretary General	Dr. P.T. Bobrowsky	Aug. 2008 – Aug. 2012	pbobrows@nrcan.gc.ca
Treasurer	Prof. W. Cavazza	Aug. 2008 – Aug. 2012	william.cavazza@unibo.it
Vice President	Prof. O. Gerel	Aug. 2008 – Aug. 2012	gerel@must.edu.mn
Vice President	Prof. J. Charvet	Aug. 2008 – Aug. 2012	jacques.charvet@univ-orleans.fr
Councillor	Prof. E. Errami	Aug. 2008 – Aug. 2012	erramiezzoura@yahoo.fr
Councillor	Mr. C. Simpson	Aug. 2008 – Aug. 2012	simpsons@grapevine.com.au
Councillor	Prof. M. Mantovani	Aug. 2006 – Aug. 2010	msmmanto@usp.br
Councillor	Prof. M. Fedonkin	Aug. 2006 – Aug. 2010	mfedon@paleo.ru
Councillor	Ms. W. Hill	Aug. 2010 – Aug. 2014	whill@geosociety.org
Councillor	Prof. S.K. Tandon	Aug. 2010 – Aug. 2014	sktand@rediffmail.com

PERMANENT SECRETARIAT

Head of Secretariat	Mr. R. Calnan	IUGS@usgs.gov
Assistant	Ms. N. Zeigler	

EXECUTIVE COMMITTEE AND BUREAU MEETINGS, JANUARY 2010 – DECEMBER 2010

61st Executive Committee Meeting	Paris, France	February 22 – 24, 2010
Bureau meeting	Brisbane, Australia	June 23, 2010

APPENDIX 2

IUGS Adhering Members

List of Member Countries 2010 and Status

Total 121, 80 active (7 active pending), 34 inactive

	COUNTRIES	CAT.	Status
1	Albania	1	A
2	Algeria	1	I
3	Angola	1	I
4	Argentina	3	A
5	Australia	6	A
6	Austria	3	A
7	Azerbaidjan	1	A
8	Bangladesh	1	A
9	Belarus	1	I
10	Belgium	3	A
11	Belize	1	I
12	Bolivia	1	I
13	Bosnia and Herzegovina	1	A
14	Botswana	2	A
15	Brazil	4	A
16	Bulgaria	2	A
17	Burkina Faso	1	I
18	Burundi	1	I
19	Cameroon	1	A
20	Canada	6	A
21	Chile	1	AP
22	China, People's Republic of	7	A
23	Colombia	1	A
24	Congo	1	I
25	Costa Rica	1	A
26	Croatia	2	A
27	Cuba	1	I
28	Cyprus	2	A
29	Czech Republic	3	A
30	Denmark	4	A
31	Ecuador	1	I
32	Egypt	2	A
33	Estonia	2	A
34	Finland	3	A
35	France	7	A
36	Gambia	1	A
37	Georgia	1	I

	COUNTRIES	CAT.	Status
38	**Germany**	7	**A**
39	**Ghana**	1	**I**
40	**Greece**	2	**A**
41	**Guatemala**	1	**I**
42	**Guyana**	1	**A**
43	**Hungary**	3	**A**
44	**Iceland**	1	**A**
45	**India**	5	**A**
46	**Indonesia**	1	**I**
47	**Iran**	3	**AP**
48	**Iraq**	2	**I**
49	**Ireland**	4	**A**
50	**Israel**	2	**A**
51	**Italy**	7	**A**
52	**Ivory Coast**	1	**A**
53	**Jamaica**	1	**I**
54	**Japan**	8	**A**
55	**Jordan**	1	**I**
56	**Kazakhstan**	3	**A**
57	**Kenya**	1	**AP**
58	**Korea North (PDR)**	1	**A**
59	**Korea South (ROK)**	3	**A**
60	**Kosovo**	2	**A**
61	**Latvia**	1	**I**
62	**Lebanon**	1	**A**
63	**Lesotho**	1	**AP**
64	**Libya**	1	**I**
65	**Lithuania**	1	**A**
66	**Luxembourg**	1	**A**
67	**Madagascar**	1	**I**
68	**Malawi**	1	**A**
69	**Malaysia**	1	**A**
70	**Mexico**	2	**A**
71	**Mongolia**	1	**A**
72	**Morocco**	2	**A**
73	**Mozambique**	1	**A**
74	**Namibia**	1	**A**
75	**Netherlands**	4	**A**
76	**New Zealand**	3	**A**
77	**Nicaragua**	1	**I**
78	**Niger**	1	**I**
79	**Nigeria**	1	**A**
80	**Norway**	3	**A**
81	**Pakistan**	1	I
82	**Panama**	1	**I**
83	**Papua New Guinea**	1	**I**
84	**Paraguay**	1	**I**
85	**Peru**	1	**A**

	COUNTRIES	CAT.	Status
86	**Philippines**	1	**I**
87	**Poland**	2	**A**
88	**Portugal**	2	**A**
89	**Romania**	3	**A**
90	**Russia**	8	**A**
91	**Saudi Arabia**	4	**A**
92	**Senegal**	1	**AP**
93	**Serbia**	1	**A**
94	**Slovak Republik**	2	**A**
95	**Slovenia**	1	**A**
96	**Somalia**	1	**I**
97	**South Africa**	4	**A**
98	**Spain**	4	**A**
99	**Sri Lanka**	1	**A**
100	**Sudan**	1	**A**
101	**Suriname**	1	**I**
102	**Swaziland**	1	**I**
103	**Sweden**	3	**A**
104	**Switzerland**	4	**A**
105	**Syria**	1	**A**
106	**Taiwan (China)**	3	**A**
107	**Tajikistan**	2	**A**
108	**Tanzania**	1	**A**
109	**Thailand**	1	**A**
110	**Tunisia**	1	**I**
111	**Turkey**	3	**A**
112	**Uganda**	1	**A**
113	**Ukraine**	3	**AP**
114	**United Kingdom**	8	**A**
115	**Uruguay**	1	**I**
116	**USA**	8	**A**
117	**Uzbekistan**	2	**A**
118	**Venezuela**	1	**I**
119	**Vietnam**	1	**AP**
120	**Yemen**	1	**A**
121	**Zambia**	1	**I**

Notes: situation as of Dec. 31st, 2010.
A=active, AP=active pending, I=inactive.

APPENDIX 3

Categories of IUGS Membership

AND MEMBERSHIP FEE (2007-2010)

Categories of Membership for 2007

Category	1	2	3	4	5	6	7	8
Value in US $	501	1002	2004	3508	6014	10024	17542	35085

Categories of Membership for 2008

Category	1	2	3	4	5	6	7	8
Value in US $	521	1042	2084	3647	6252	10420	18235	36470

Categories of Membership for 2009

Category	1	2	3	4	5	6	7	8
Value in US $	541	1028	2164	3787	6492	10820	18935	37870

Categories of Membership for 2010

Category	1	2	3	4	5	6	7	8
Value in US $	539	1078	2155	3772	6466	10777	18859	37719

APPENDIX 4

IUGS Financial Situation and Statement

Income in 2010

	RECEIVED			TOTAL (US dollars)
INCOME	< 2010	2010	> 2010	
Membership dues		**43,515.26**	**305,515.38**	**349,030.64**
Adhering Organizations	*43,515.26*	*305,515.38*		
IGCP Program		**67,528.00**	**33,955.00**	**101,483.00**
UNESCO*	*67,528.00*	*33,955.00*		
Other incomes			**89,519.52**	**89,519.52**
IGC capitation fee (2nd inst.)		*56,622.12*		
YIPE loan refund		*10,000.00*		
Episodes dissemination fund		*2,450.00*		
GARS		*35,000.00*		
Geological Society of London		*14,008.28*		
Interests			**21,541.34**	**21,541.34**
INCOME				**561,574.50**

* Including contribution from the Government of China

Expenses in 2010

	PAID			TOTAL
	< 2010	2010	> 2010	
EXPENSES				
IGCP Projects	**12,000.00**	**180,500.00**		**192,500.00**
UNESCO		*96,500.00*		
IUGS	*12,000.00*	*84,000.00*		
Joint Programs		**11,244.00**		**11,244.00**
ILP		*10,000.00*		
Geoparks Networks		*1,244.00*		
IUGS Commissions, Task Groups and Committees		**87, 900. 00**		**87, 900. 00**
Commissions		*79,000.00*		
Task Groups		*8,900.00*		
Affiliated Organizations		**26,000. 00**		**26,000. 00**
Contributions		**4,299. 00**		**4,250. 00**
Contribution ICSU		*4,299. 00*		
Other expenses		**78,610.00**		**78,610.00**
Routine meetings		*14,960.00*		
Representing Scientific Meetings		*43,634.00*		
Ad-hoc Reviews		*12,974.00*		
Exhibitions		*977.00*		
Website		*3,018.00*		
Bank charges		*3,047.00*		
Episodes		**25,450.00**		**25,450.00**
IUGS Contribution		*23,000.00*		
UNESCO Dissemination Funds		*2,450.00*		
Contingency		**1,589.00**		**1,589.00**
Officers reserve		**8,388.00**		**8,388.00**
EXPENSES				**435,980.00**

APPENDIX 5

IUGS Allocations in 2010

EXPENSES USD		Allocated 2010
IGCP		**180,500**
	UNESCO	96,500
	IUGS	84,000
Joint Programmes		**55,000**
GARS *Geological Application of Remote Sensing*	IUGS	6,000
	UNESCO	35,000
ILP *International Lithosphere Program*		10,000
Geoparks Networks		4,000
IUGS Commissions		**81,000**
	CGI *(Geoscience Info)*	7,500
	COGE *(Edu., Training / Tech. Transfer)*	2,000
	GEM *(Geosci. Env. Mgmt.)*	10,000
	ICS (*Stratigraphy*)	50,000
	INHIGEO (Hist. Geol. Sci.)	4,500
	TECTASK (*Tectonics and Structural Geology*)	7,000
IUGS Task Groups		**4,000**
	TGGB (*Geochemical Baselines*)	4,000
Committees		**8,000**
	SPC (Strategic Planning Committee)	
	PC (Publications Committee)	8,000
Affiliated Organizations		**27,000**
	AGID Ass. of Geoscientists for Int. Develop.	1,000
	CGMW Commission Geological Map World	6,000
	GSAf Geological Society of Africa	5,000
	IAMG International Association for Math. Geol.	1,000
	ICL International Consortium on Landslides	5,000
	AAWG Afr. Ass. Women in Geosciences	5,000
	IGEO Int. Geological Education Organization	4,000
Contributions		**4,299**
	ICSU	4,299

EXPENSES USD		Allocated 2010
Other expenses		**121,000**
	Routine Meetings (including celebration)	65,000
	Representative Scientific Meetings	6,000
	Exhibitions	8,000
	Website	3,000
	ARC	15,000
	Promotion Items (incl. 50th Anniv. items)	5,000
	Anniversary Publication	15,000
	Bank Charges	4,000
Episodes Episodes: Dissemin. Devlp. Countries		25,450
	IUGS Contribution	23,000
	UNESCO	2,450
Contingency		**12,000**
Hutchison reserve		**2,000**
Secretariat expenses		**20,000**
Officers reserves		5,000

APPENDIX 6

ICS – IUGS Ratified (2004-2010)

GLOBAL BOUNDARY STRATOTYPE SECTIONS AND POINTS (GSSP)

EON, Era, System, Series, Stages	Age (Ma)	Est. ±Ma	Derivation of age	Principal correlative events	GSSP and location	Status	Publication
PHANEROZOIC Eon							
Cenozoic Era							
Quaternary System							
Holocene Series							
Holocene	0.011784	0.00	Annual layer counting in ice core ("ka" is relative to AD2000); counting uncertainty is 69 years	Climatic -- End of the Younger Dryas cold spell, which is reflected in a shift in deuterium excess values, followed closely by changes in d18O, dust concentration, a range of chemical species, and by a change in annual layer thickness	North GRIP ice core, Greenland (75.1°N, 42.32°W)	Ratified 2008	Episodes 31/2, 2008; J. Quaternary Sci., Vol. 24 pp. 3-17, 2009 -
Pleistocene Series							
Tarantian Stage	0.126	0.00	Astronomical cycles in sediments	Climatic -- Base of the Eemian interglacial stage (= base of marine isotope stage 5e) before final glacial episode of Pleistocene. Base of Tyrrhrenian regional stage of Mediterranean	Amsterdam-Terminal borehole (63.5 m below surface), Netherlands (52°22'45"N, 4°54'52"E)	Accepted by ICS in 2008; on hold by IUGS	Episodes 31/2, 2008 -
Ionian Stage	0.781	0.00	Astronomical cycles in sediments	Magnetic -- Brunhes-Matuyama magnetic reversal (base of Chron 1n)	Candidate sections in Italy (Montalbano Jorica or Valle di Manche) and Japan (Chiba)	GSSP anticipated in 2011	-
Neogene System							
Miocene Series							
Serravallian Stage	13.82	0.00	Astronomical cycles in sediments	Climatic -- Mi3b isotopic event (global cooling episode) in upper magnetic polarity chronozone C5ACn. Above (13.65 Ma) is the lowest occurrence of nannofossil *Sphenolithus heteromorphus* (previously considered base of Serravallian).	Base of Blue Clay Formation, Ras il Pellegrin coastal section, Fomm Ir-Rih Bay, west Malta (35°54'50"N, 14°20'10"E)	Ratified 2007	Episodes, 32/3, 152 - 166 -

Langhian Stage	15.97	0.00	Calibrated magnetic anomaly scale	Planktonic foraminifer -- Near first occurrence of *Praeorbulina glomerosa* and top of magnetic polarity Chron C5Cn.1n	Potentially in astronomically-tuned ODP core	GSSP anticipated in 2011	-
Burdigalian Stage	20.43	0.00	Calibrated magnetic anomaly scale	Planktonic foraminifer -- Near lowest occurrence of *Globigerinoides altiaperturus* or near top of magnetic polarity Chron C6An	Potentially in astronomically-tuned ODP core	GSSP anticipated in 2011	-
Paleogene System							
Oligocene Series							
Chattian Stage	28.4	0.1	Calibrated magnetic anomaly scale relative to base-Miocene and C24n. Arbitrary 100 kyr uncertainty assigned.	Potentially extinction of planktonic foraminifer *Chiloguembelina* (base Foram Zone P21b); or an isotopic/climatic event	Monte Cagnero (Umbria-Marche region, Italy)	GSSP anticipated in 2011	-
Eocene Series							
Priabonian Stage	37.2	0.1	Calibrated magnetic anomaly scale relative to base-Miocene and C24n	Potentially near lowest occurrence of calcareous nannofossil *Chiasmolithus oamaruensis* (base Zone NP18)	Tiziano Bed, Alano section (Piave River; Veneto Prealps, Belluno province, N. Italy)	GSSP anticipated in 2011	-
Bartonian Stage	40.4	0.2	Calibrated magnetic anomaly scale relative to base-Miocene and C24n	Potentially near base of magnetic polarity Chron C19n, or extinction of calcareous nannofossil *Reticulofenestra reticulata*	Contessa highway section near Gubio, Central Apennines, Italy	GSSP anticipated in 2011	-
Lutetian Stage	48.6	0.2	Calibrated magnetic anomaly scale relative to base-Miocene and C24n	Potentially a planktonic foraminifer (lowest occurrence of *Hantkenina*), or magnetic polarity chronozone. [Events traditionally thought to be synchronous and used to place the base-Lutetian are now known to occur at different levels.]	Leading candidates are Gorrondatxe beach section, W Pyrenees, Basque country (Spain) and Agost section, Murcia province, Betic Cordilleras (Spain)	GSSP anticipated in 2011	-
Paleocene Series							
Thanetian Stage	58.7	0.2	Astronomical cycles in sediments scaled from base Paleocene, using base of magnetic polarity chronozone C26n. Arbitrary 0.1 (2 precession cycles, plus the base-Paleogene radiometric) uncertainty assigned to all estimates.	Magnetic polarity chronozone, base of C26n	Leading candidate is Zumaya section, northern Spain	Ratified 2008	-

Selandian Stage	61.1	0.2	Astronomical cycles in sediments scaled from base Paleocene, using magnetic polarity chronozone placement of C26r	Geochemical -- Onset of a carbon isotope shift and sea-level drop (Exxon/Hardenbol sequence boundary "Se1"); near diversification of the *Fasciculith* group of calcareous nannoplankton, preceding the lowest *Fasciculithus tympaniformis* (base of nannoplankton zone NP5). Approximately 0.65 myr (ca. 33 precession cycles) above the base of magnetic polarity Chron C26r	Base of the red marls of Itzurun Formation in the Zumaia section at San Telmo Beach (N. Spain) (43º18'02"N, 2º15'34"W)	Ratified 2008	-
Mesozoic Era							
Cretaceous System *Most Cretaceous substages also have recommended GSSP criteria*							
Upper Cretaceous Series							
Campanian Stage	83.5	0.7	Spline fit of Ar-Ar ages and ammonite zones	Crinoid, extinction of *Marsupites testudinarius*	Leading candidates are in west of Seafprd Head (southern England) and Waxahacie dam spillway (north-central Texas)	GSSP anticipated in 2011	-
Santonian Stage	85.8	0.7	Spline fit of Ar-Ar ages and ammonite zones	Inoceramid bivalve, lowest occurrence of *Cladoceramus undulatoplicatus*	Leading candidates are Olazagutia (Spain) and Ten-Mile Creek (Texas)	GSSP anticipated in 2011	-
Coniacian Stage	89.3	1.0	Spline fit of Ar-Ar ages and ammonite zones	Inoceramid bivalve, lowest occurrence of *Cremnoceramus rotundatus* (sensu Tröger non Fiege)	Candidates are in central Poland, Colorado, USA, and Germany	GSSP anticipated in 2011	-
Lower Cretaceous Series							
Albian Stage	112.0	1.0	Cycle-stratigraphy of FAD of *P. columnata* relative to base of Cenomanian, with large uncertainty due to lack of GSSP criteria	Candidates include: (1) calcareous nannofossil, lowest occurrence of *Praediscosphaera columnata* (= *P. cretacea* of some earlier studies), (2) carbon-isotope excursion (black-shale episode), (3) ammonites	Southeastern France	GSSP anticipated in 2011	-

Aptian Stage	125.0	1.0	Base of M0r, as recomputed from Ar-Ar age from MIT guyot	Magnetic -- base of Chron M0r; near base of *Paradeshayesites oglanlensis* ammonite zone	Leading candidate is Gorgo a Cerbara, Piobbico, Umbria-Marche, central Italy	GSSP anticipated in 2011	-
Barremian Stage	130.0	1.5	Pacific spreading model for magnetic anomaly ages (variable rate), using placement at M5n.8.	Ammonite -- lowest occurrence of *Spitidiscus [now Taveraidiscus] hugii – Spitidiscus vandeckii* group	Río Argos near Caravaca, Murcia province, S. Spain	GSSP anticipated in 2011	-
Hauterivian Stage	133.9	2.0	Pacific spreading model for magnetic anomaly ages (variable rate), using placement at base M11n	Ammonite -- lowest occurrence of genus *Acanthodiscus* (especially *A. radiatus*)	Leading candidate is La Charce village, Drôme province, southeast France	GSSP anticipated in 2011	-
Valanginian Stage	140.2	3.0	Pacific spreading model for magnetic anomaly ages (variable rate), using placement at M14r.3 (base T. pertransiens).	Calpionellid -- lowest occurrence of *Calpionellites darderi* (base of *Calpionellid* Zone E); followed by the lowest occurrence of *"Thurmanniceras" pertransiens*	Leading candidates are near Montbrun-les-Bains (Drôme province, SE France) and Rio Argos (S. Spain)	GSSP anticipated in 2011	-
Berriasian Stage, base Cretaceous System	145.5	4.0	Pacific spreading model for magnetic anomaly ages (variable rate), assigning to base of *Berriasella jacobi* zone (M19n.2n.55)	Maybe near lowest occurrence of ammonite *Berriasella jacobi*		GSSP anticipated in 2011	-
Jurassic System							
Upper Jurassic Series							
Tithonian Stage	150.8	4.0	Pacific spreading model for magnetic anomaly ages (variable rate), age is provisionally assigned as base M26r.2	Maybe near base of *Hybonoticeras hybonotum* ammonite zone and lowest occurrence of *Gravesia* genus, and the base of magnetic polarity Chron M22An	Candidates are Pfeffingen (Swabian Alb, SW Germany) and in Russia	GSSP anticipated in 2011	-
Kimmeridgian Stage	155.6	4.0	Pacific spreading model for magnetic anomaly ages (variable rate), assigning to base M26r.2 (Boreal ammonite definition)	Ammonite -- base of *Pictonia baylei* ammonite zone of Boreal realm	Flodigarry (Isle of Skye, NW Scotland) (57.6°N, 6.2°W)	GSSP anticipated in 2011	-
Oxfordian Stage	161.2	4.0	Pacific spreading model for magnetic anomaly ages (variable rate), assigning to base M36An	Ammonite -- *Cardioceras redcliffense* Horizon at base of the *Cardioceras scarburgense* Subzone (defines base of *Quenstedtoceras mariae* Zone)	Candidates are Redcliff Point (Dorset, SW England) and Savouron (Provence province, SE France)	GSSP anticipated in 2011	-

Middle Jurassic Series							
Callovian Stage	164.7	4.0	Equal subzones scale Bajo-Bath-Callov	Ammonite -- lowest occurrence of the genus Kepplerites (Kosmoceratidae) (defines base of *Macrocephalites* herveyi Zone in sub-Boreal province of Great Britain to southwest Germany)	Candidates are Pfeffingen (Swabian Alb, SW Germany) and in Russia	GSSP anticipated in 2011	-
Bathonian Stage	167.7	3.5	Equal subzones scale Bajo-Bath-Callov	Ammonite -- lowest occurrence of *Parkinsonia (G.) convergens* (defines base of *Zigzagiceras zigzag* Zone)	Candidates are in Iberia, and Ravin du Bès near Digne (Hautes-Alpes, SE France)	Ratified 2008	Episodes 32/4, p. 222 - 248, 2009 -
Lower Jurassic Series							
Toarcian Stage	183.0	1.5	Duration of Aalenian-Toarcian from cycle stratigraphy	Ammonite -- near lowest occurrence of a diversified *Eodactylites* ammonite fauna; correlates with the NW European Paltus horizon.	Peniche (Portugal)	GSSP anticipated in 2011	-
Pleinsbachian Stage	189.6	1.5	Base of Bed 73b	Ammonite association of *Bifericeras donovani* and *Apoderaceras* sp.	Wine Haven, Robin Hood's Bay, Yorkshire Coast, England	Ratified 2005	Episodes 29/2 p.93-106, 2006
Hettangian Stage	199.6	0.6	U-Pb age just below proposed GSSP for base-Jurassic in British Columbia	Near lowest occurrence of *Psiloceras* ammonite group; associated with a carbon-isotope excursion	Leading candidate is New York Canyon (Nevada, USA) with Kunga Island (British Columbia, Canada) as auxiliary. Other candidate is St. Audries' Bay (Somerset, UK)	Ratified 2010	-
Triassic System							
Upper Triassic Series							
Rhaetian Stage	203.6	1.5	Magnetostratigraphic correlation to cycle-scaled Newark magnetic polarity pattern	Near lowest occurrence of ammonite *Cochlocera*, conodonts *Misikella* spp. and Epigondolella mosheri, and radiolarian *Proparvicingula moniliformis*	Key sections in Austria, British Columbia (Canada), and Turkey	GSSP anticipated in 2011	-
Norian Stage	216.5	2.0	Magnetostratigraphic correlation to cycle-scaled Newark magnetic polarity pattern. However, revised correlations suggest 228.8 Ma	Ammonoid -- Base of *Stikinoceras kerri* ammonoid zone; near the appearance of *Metapolygnathus echinatus* within the *M. communisti* conodont zone	Candidates are Black Bear Ridge (Williston Lake, Canada) and Pizzo Mondello (Sicily, Italy)	GSSP anticipated in 2011	-

Carnian Stage	228.7	2.0	Magnetostratigraphic correlation to cycle-scaled Newark magnetic polarity pattern. However, revised correlations suggest 236.8 Ma	Ammonoid -- lowest occurrence of *Daxatina* (base of *D. canadesis* subzone of Trachyceras Zone). Near appearances of conodont *Metapolygnathus polygnathiformis* noah and of *Halobia* bivalves. Just above base of S2n magnetic polarity zone and above the maximum flooding surface of Sequence Lad 3.	Candidate GSSP is base of marly limestone bed from base of San Cassiano Fm, 4.5 km south of S. Cassiano town, Dolomites, N. Italy. Important reference sections in New Pass (Nevada, USA).and Spiti (India) (46°31'37"N, 11°55'49"E)	Ratified 2008	Albertiana 36, Dec 2007
Middle Triassic Series							
Ladinian Stage	237.0	2.0	U-Pb array by Mundil et al. on levels near Nevadites (= Secedensis) ammonite zone in Dolomites, plus placement relative to magnetostratigraphy correlations to cycle-scaled Newark magnetic polarity pattern. However, revised correlations and zircon processing suggest 240.5 Ma	Ammonoid -- lowest occurrence of the *Eoprotrachyceras curionii* (base of the E. curionii zone); onset of the Trachyceratidae family. Above lowest *Budurovignathus praehungaricus* conodont	Top of "Chiesense groove", 5m above base of Buchenstein Beds, Caffaro river bed, Bagolino (Brescia province, N. Italy) (45°49'9.5"N, 10°28'15.5"E)	Ratified 2005	Episodes 28 (4), 233-244, 2005
Anisian Stage	245.0	1.5	Cycle-stratigraphy scaled to base-Triassic. However, revised zircon processing at P/Tr suggest 251.0 Ma	Either Conodont -- profound turnover including lowest occurrences of *Chiosella* (*Cs. gondolloides* followed by *Cs. timorensis*), or Magnetic -- base of magnetic normal-polarity chronozone MT1n between those two conodont levels. Near base of *Paracrochordiceras-Japonites* ammonite beds	Candidate GSSPs are in northern Dobrogea province, Romania, and Guandao Guizhou province, China	GSSP anticipated in 2011	Albertiana 36, Dec 2007
Lower Triassic Series							
Olenekian Stage	249.5	0.7	Cycle-stratigraphy scaled to base-Triassic. However, revised zircon processing at P/Tr suggest 251 Ma	Conodont -- lowest occurrence of *Neospathodus waageni* s.l., just above base of *Rohillites rohilla* ammonite zone, and below lowest occurrence of *Flemingites* and *Euflemingites* ammonite genera. Within a prominent positive Carbon-13 peak, and just above widely recognizable sequence boundary	Candidate GSSP is in the Mikin Fm.~1 km NE of Mud (Muth) village, Spiti valley, northwest India (31°57'55.5"N, 78°01'28.5"E)	GSSP anticipated in 2011	Albertiana 36, Dec 2007

Paleozoic Era							
Permian System							
Lopingian Series							
Changhsingian Stage	253.8	0.7	Permian-Carboniferous time scale is derived from calibrating a master composite section to selected radiometric ages	Conodont -- near lowest occurrence of *conodont Clarkina wangi*	Base of Bed 4a-2, 88 cm above base of Changxing Limestone, Meishan D section (Zhejiang province, E. China) (31°4'55"N, 119°42'22.9"E)	Ratified 2005	Episodes 29(3), p. 175–182, 2006
Wuchiapingian Stage	260.4	0.7		Conodont -- lowest occurrence of *Clarkina postbitteri postbitteri*	Base of Bed 6K/115 in Penglaitan section, S. bank of Hongshui River, 20 km ESE of Laibin country town (Guangxi province, S. China). Nearby Tieqiao (Rail-bridge) section is a supplementary reference section (23°41"43"N, 109°19"16"E)	Ratified 2004	Episodes 29(4), p.253-262, 2006
Cisuralian Series							
Kungurian Stage	275.6	0.7		Conodont -- near lowest occurrence of conodont *Neostreptognathus pnevi-N. exculptus*	Leading candidate is Mechetlino in southern Ural Mtns.	GSSP anticipated in 2011	-
Artinskian Stage	284.4	0.7		Conodont -- lowest occurrence of conodont *Sweetognathus whitei*	Leading candidate is Dalny-Tulkas sections in southern Ural Mtns.	GSSP anticipated in 2011	-
Sakmarian Stage	294.6	0.8	"	Conodont -- near lowest occurrence of conodont *Sweetognathus merrelli*	Leading candidate is at Kondurovsky, Orenburg Province, Russia	GSSP anticipated in 2011	-

Carboniferous System							
Pennsylvanian Subsystem (series classification approved in 2004)							
Upper Pennsylvanian Series							
Gzhelian Stage	303.4	0.9	"	Conodont -- lowest occurrence of *Idiognathodus* simulator (s.str.). Close to lowest occurrence of ammonoid *Shumardites*	Candidates are in southern Urals or Nashui (south China)	GSSP anticipated in 2011	-
Kasimovian Stage	307.2	1.0	"	Fusulinid (benthic foraminifer) -- lowest occurrence of fusulinid *Protriticites*, which is near lowest occurrence of ammonoid *Eothalossoceras*. Alternative (higher) base is lowest occurrence of fusulinid *Montiparus montiparus*, which is near lowest occurrence of conodont *Idiognathodus sagittalis*. Age given here is the higher version; the lower one is about 1 myr older.	Candidates are in southern Urals, southwest USA and south-central China	GSSP anticipated in 2011	-
Middle Pennsylvanian Series							
Moscovian Stage	311.7	1.1	"	Conodont -- either the lowest occurrence of Idiognathoides postsulcatus or of *Declinognathodus donetzianus*	Candidates are in southern Urals or Nashui (south China)	GSSP anticipated in 2011	-
Lower Pennsylvanian Series							
Mississippian Subsystem							
Upper Mississippian Series (series classification approved in 2004)							
Serpukhovian	328.3	1.6	"	Conodont -- lowest occurrence of *Lochriea ziegleri* [one zone lower than working definition in GTS04]	Candidates are Verkhnyaya Kardailovka (southern Urals) or Nashui (south China)	GSSP anticipated in 2011	-
Middle Mississippian Series							
Visean	345.3	2.1	"	Benthic Foraminifer -- first appearance of *Eoparastaffella simplex*, in the lineage of "*E. ovalis* group" to *E. simplex*	Stream section south of Pengchong village, about 130 km SW of Guilin, Guangxi Autonomous Region (south China) (24°26'N, 109°27'E)	Ratified 2008	-

Ordovician System							
Upper Ordovician Series							
Hirnantian Stage	445.6	1.5	"	Graptolite, lowest occurrence of *Normalograptus extraordinarius*, base of major positive carbon-13 isotope excursion, and beginning of pronounced sea-level fall associated with onset of a major glaciations	0.39 m below base of Kuanyinchiao Bed, Wangjiawan North section, 42 km N. of Yichang city (west Hubei province, China) (30°59'2.68"N, 111°25'10.76"E)	Ratified 2006	Episodes 29 (3), p.183-196, 2006
Katian Stage	455.8	1.6	"	Graptolite, lowest occurrence of *Diplacanthograptus caudatus*. Just below base of Guttenberg carbon-13 isotope excursion	Above base of Bigfort Chert, Black Knob Ridge section, 5 km NE of Atoka town (S. Oklahoma, USA) (34°25.829'N, 96°4.473'W)	Ratified 2006	Episodes 30 (4), 2007
Middle Ordovician Series							
Dapingian Stage	471.8	1.6		Conodont -- lowest occurrence of *Baltoniodus triangularis*. Approximates the boundary between the lower and upper intervals of *Azygograptus suecicus* graptolite zone	Near base of the Dawan Formation (Huanghuachang roadside exposure, 22km NE of the Yichang city (Hubei Province, South China) (30°51'37.8''N, 110°22'26.5''E)	Ratified 2007	Episodes 28 (2), p.105-117, 2005; Episodes 32 (2), p. 96-113, 2009
Cambrian System *Overview of potential Cambrian subdivisions in Episodes 23 (3), p. 188-195, 2000*							
Furongian Series							
Stage 10	492.0	-	Estimaged from trilobite-zone scalings	Trilobite -- lowest occurrence of *Lotagnostus americanus*. An internal substage division might be lowest occurrence of *Codylodus adesei* conodont	Candidate section is Duibian (Zhejiang province, China)	GSSP anticipated in 2011	-
Stage 9	496.0	-	Estimaged from trilobite-zone scalings	Trilobite -- lowest occurrence of *Agnostotes orientalis*	Candidate sections at Duibian (Zhejiang province, China) and Gonggiri (Korea)	GSSP anticipated in 2011	-

Series 3							
Guzhangian Stage	503.0	-	Estimaged from trilobite-zone scalings	Trilobite -- lowest occurrence of *Lejopyge laevigata*	>121.3 m above the base of the Huaqiao Formation. Louyixi, Guzhang County, NW Hunan Province, S. China (28°43.20'N, 109°57.88'E)	Ratified 2008	Episodes 32/1, p.41-55, 2009-
Drumian Stage	506.5	-	Estimaged from trilobite-zone scalings	Trilobite -- lowest occurrence of *Ptychagnostus atavus*. Just above the GSSP is a significant negative carbon-isotope excursion	62 m above base of Wheeler Fm., Stratotype Ridge, Drum Mountains, western Utah, USA (39°30.705'N, 112°59.489'W)	Ratified 2006	Episodes 30 (2), 2007
Stage 5	510.0	-	Estimaged from trilobite-zone scalings -- slightly younger than the 511 Ma age on *Protolenus* and *Ellipsocephalus*-bearing strata in New Brunswick	Trilobite -- potentially lowest occurrence of *Oryctocephalus indicus*	Candidate sections are Wuliu-Zengjiayan (east Guizhou, China) and Split Mountain (Nevada, USA)	GSSP anticipated in 2011	-
Series 2							
Stage 4	517.0	-	-	Trilobite -- lowest occurrence of *Olenellus* or *Redlichia*	-	GSSP anticipated in 2011	-
Stage 3	521.0	-	-	Trilobites -- their lowest occurrence (superfamily *Fallotaspidoidae*)	-	GSSP anticipated in 2011	-

Status of GSSPs 2004 - 2010 modified from: http://www.stratigraphy.org/gssp.htm [URL 2008]; and https://engineering.purdue.edu/Stratigraphy/gssp/index.php [URL 2011]

APPENDIX 7

IGCP Projects – 2010

(IUGS-UNESCO CO-SPONSORED)

506 MARINE AND NON-MARINE JURASSIC
Project leaders: Jingeng Sha (China), Nicol Morton (France), W. A.P. Wimbledon (United Kingdom), Paul E. Olsen (USA), Grzegorz (Gregory) Pieñkowski (Poland), Yongdong Wang (China)
Duration: 2005-2009 (OET)
http://www.nigpas.ac.cn/IGCP506index.asp

507 PALEOCLIMATES OF THE CRETACEOUS IN ASIA
Project leaders: Yong Il Lee (Korea), Xiaoqiao Wan (China), Takashi Sakai (Japan), Krishnan Ayyasami (India)
Duration: 2006-2010
http://igcp507.kopri.re.kr/

509 PALAEOPROTEROZOIC SUPERCONTINENTS AND GLOBAL EVOLUTION
Project leaders: S.M. Reddy (Australia), D. Evans (USA), R. Mazumder (India)
Duration: 2005-2009 (OET)
http://earth.geology.yale.edu/igcp509/

510 A-TYPE GRANITES AND RELATED ROCK THROUGH TIME
Project leaders: Roberto Dall'Agnol (Brazil), Carol D. Frost (USA), O. Tapani Rämö (Finland), L.J. Robb (South Africa)
Duration: 2005-2009 (OET)
http://www.igcp-510.org

512 NEOPROTEROZOIC ICE AGES
Project leaders: Graham A. Shields (Australia), Emmanuelle Arnaud (Canada)
Duration: 2005-2009 (OET)
www.IGCP512.org

513 KARST AQUIFERS AND WATER RESOURCES
Project leaders: Chris Groves (USA), Yuan Daoxian (China), Bartolome Andreo-Novarro (Spain), Heather Viles (United Kingdom)
Duration: *2005-2009 (OET)*
http://hoffman.wku.edu/igcp/513.html (General information)
http://hoffman.wku.edu/karst2007/k2007.html
http://www.wku.edu/cehp
http://www.cosis.net/members/meetings/sessions/information.php?p_id=247&s_id=4433

514 FLUVIAL PALAEOSYSTEMS: EVOLUTION AND MINERAL DEPOSITS
Project leaders: A. Duk-Rodkin (Canada), Baohong Hou (Australia), Li Ziying (China), Vladimir Dolgopolov (Kazakhstan), N. Patyk-Kara (Russia) passed away in 2008
Duration: 2005-2009 (OET)
http://www.igem.ru/igcp514/

516 GEOLOGICAL ANATOMY OF EAST AND SOUTH EAST ASIA
Project leaders: Ken-Ichiro Hisada (Japan), Punya Charusiri (Thailand), Byung-Joo Lee (Rep. of Korea), Xiaochi Jin (China)
Duration: 2005-2009 (OET)
http://staff.aist.go.jp/hara-hide/igcp516

519 HYDROGEOLOGY, HYDROCHEMISTRY AND MANAGEMENT OF COASTAL AQUIFERS ON THE ATLANTIC COAST OF SOUTH AMERICA

Project leaders: Emilia Bocanegra (Argentina), Emilio Custodio (Spain), Marisol Manzano (Spain), Gerson Cardoso (Brazil), Jenny Reynolds Vargas (Costa Rica)
Duration: 2005-2009 (OET)
http://www.mdp.edu.ar/exactas/geologia/cgcyc/hidrogeologia.html
http://www.mdp.edu.ar/exactas/geologia/cgcyc/iugs/Index.htm

521 BLACK SEA MEDITERRANEAN CORRIDOR DURING THE LAST 30 KY: SEA LEVEL CHANGE AND HUMAN ADAPTATION
Project leaders: Valentina Yanko-Hombach (Canada), Yucel Yilmaz (Turkey), Pavel Dolukhanov (United Kingdom)
Duration: 2005-2009 (OET)
http://www.avalon-institute.org/IGCP
http://black.sealevel.ca
http://www.bridge.bris.ac.uk/projects/EMBSECBIO
http://www.paleontol.geo.sfedu.ru

523 GROWNET – GLOBAL GROUND WATER NETWORK
Project leaders: Shrikant Daji Limaye (India), Antony J Reedman (United Kingdom)
Duration: 2005-2009 (OET)
http://www.igcp-grownet.org

526 RISKS RESOURCES AND RECORD OF THE PAST ON THE CONTINENTAL SHELF
Project leaders: Francesco Latino Chiocci (Italy), Lindsay Collins (Australia), Michel Michaelovitch de Mahiques (Brazil), Renée Hetherington (Canada**)**
Duration: 2007(-2011) (suspended)
http://gte526.geoma.net

540 GOLD-BEARING HYDROTHERMAL FLUIDS OF OREGENIC DEPOSITS
Project leaders: P.S. Garofalo (Italy), J.R. Ridley (USA), Vsevolod Prokof'ev (Russia)
Duration: 2007-2011
http://www.geomin.unibo.it/igcp_540

543 LOW-TEMPERATURE THERMOCHRONOLOGY: APPLICATIONS AND INTER-LABORATORY CALIBRATION
Project leaders: Massimiliano Zattin (Italy), J. I. Garver (USA), Vitaliy A. Privalov (Ukraine), Alexei V. Soloviev (Russia), Cornelia Spiegel (Germany), Maarten de Wit (South Africa), Dewen Zheng (China)
Duration: 2007-2010
http://www.geoscienze.unipd.it/~zattin/Home.html

546 SUBDUCTION ZONES OF THE CARIBBEAN
Project leaders: Antonio Garcia-Casco (Spain), Uwe Martens (USA)
Duration: 2007-2011
http://www.ugr.es/~agcasco/igcp546/

555 RAPID ENVIRONMENTAL/CLIMATE CHANGE IN THE CRETACEOUS GREENHOUSE WORLD
Project leaders: Chengshan Wang (China), Robert Scott (USA), Hugh Jenkyns (United Kingdom), Michael Wagreich (Austria), William Hay (USA); Zakharov Y.D. (Russia)
Duration: 2007-2010
www.cretaceousworld.com/igcp555

557 DIAMONDS, XENOLITHS AND KIMBERLITES
Project leaders: Holger Sommer (Botswana), Klaus Regenauer-Lieb (Australia), Haemyeong Jung (South Korea), Jonathan Kashabano (Tanzania), Gétan Moloto-A-Kenguemba (Central African Republic)
Duration: 2007-2011
http://www.holgersommer.de/IGCP_557.html

559 CRUSTAL ARCHITECTURE AND LANDSCAPE EVOLUTION
Project leaders: Bruce R. Goleby (Australia)

Duration: 2008-2012
http://www.earthscrust.org

565 GEODETIC MONITORING OF THE GLOBAL WATER CYCLE
Project leaders: Hans-Peter Plag (USA), Richard S. Gross (USA), Markus Rothacher (Germany), Norman L. Miller (USA), Susanna Zerbini (Italy), Chris Rizos (Australia)
Duration: 2008-2012
http://www.iag-ggos.org/igcp565

567 EARTHQUAKE ARCHAEOLOGY – ARCHAEOSEISMOLOGY ALONG THE ALPINE-HIMALAYAN SEISMIC ZONE
Project leaders: Manuel Sintubin (Belgium), Iain Stewart (United Kingdom), Tina Niemi (USA), Erhan Altunel (Turkey)
Duration: 2008-2012
http://ees.kuleuven.be/igcp/567

571 RADON, HEALTH AND NATURAL HAZARDS
Project leaders: Gavin K. Gillmore (United Kingdom), Robin G.M. Crockett (United Kingdom), Frederic Perrier (France), Tadeusz Przylibski (Poland), Vivek Walia (Taiwan of China), Bikram Jit Singh Bajwa (India)
Duration: 2009-2013
http://www2.northampton.ac.uk/appliedsciences/appliedscience/research/igcp

572 PERMIAN-TRIASSIC ECOSYSTEMS
Project leaders: Zhong Qiang Chen (Australia), Richard J. Twitchett (United Kingdom), Jinnan Tong (China), Margret L. Fraiser (USA), Sylvie Crasquin (France), Steve Kershaw (United Kingdom), Thomas J. Algeo (USA), Kliti Grice (Australia)
Duration: 2008-2012
http://www.igcp572.org/

574 BENDING AND BENT OROGENS, AND CONTINENTAL RIBBONS
Project leaders: Stephen T. Johnston (Canada), Gabriel Gutierrez-Alonso (Spain), Arlo Weil (USA)
Duration: 2009-2013
http://www.brynmawr.edu/geology/faculty/aweil/IGCP-574/

575 PENNSYLVANIAN TERRESTRIAL HABITATS AND BIOTAS OF SOUTHEASTERN EURAMERICA
Project leaders: Christopher J. Cleal (United Kingdom), Stanislav Opluštil (Czech Republic), Isabel van Waveren (The Netherlands), Mihai E. Popa (Romania), Barry A. Thomas (United Kingdom)
Duration: 2010-2014
Website in preparation

580 APPLICATION OF MAGNETIC SUSCEPTIBILITY ON PALEOZOIC SEDIMENTARY ROCKS
Project leaders: Anne-Christine da Silva (Belgium), Michael T. Whalen (USA), Jindrich Hladil (Czech Republic), Daizhao Chen (China), Simo Spassov (Belgium), Frederic Boulvain (Belgium), Xavier Devleeschouwer (Belgium)
Duration: 2009-2013
Website in preparation

581 EVOLUTION OF ASIAN RIVER SYSTEMS
Project leaders: Hongbo Zheng (China), Liviu Giosan (USA), Ryuji Tada (Japan), Peter Clift (United Kingdom), Masood Ahmad (India), Zheng-Xiang Li (Australia), Kuo-Yen Wei (Taiwan of China)
Duration: 2009-2013
http://isg.nju.edu.cn/Exchange/Index.aspx

582 TROPICAL RIVERS: HYDRO-PHYSICAL PROCESSES, IMPACTS, HAZARDS AND MANAGEMENT
Project leaders: Edgardo M. Latrubesse (Argentina), Rajiv Sinha (India), Jose C. Stevaux (Brazil)
Duration: 2009-2013
Website in preparation

585 E-MARSHAL: EARTH'S CONTINENTAL MARGINS: ASSESSING THE GEOHAZARD FROM SUBMARINE LANDSLIDES
Project leaders: Roger Urgeles (Spain), David Mosher (Canada), Jason Chaytor (USA), Michael Strasser (Germany)
Duration: 2010-2014
http://www.igcp585.org

586-Y GEODYNAMIC PROCESSES IN THE ANDES 32°-34°S
Project leaders: Laura Giambiagi (Argentina), Luisa Pinto (Chile), Maisa Tunik (Argentina), Sergio Sepúlveda (Chile), Stella Maris Moreiras (Argentina), Marcelo Farías (Chile), Greg Hoke (USA)
Duration: 2010-2012 (Young Scientist Project)
Website in preparation

587 ENTITY, FACIES AND TIME – THE EDIACARAN (VENDIAN) PUZZLE
Project leaders: Patricia Vickers-Rich (Australia), Mikhail Fedonkin (Russia), Jim Gehling (Australia), Guy Narbonne (Canada)
Duration: 2010-2014
http://www.geosci.monash.edu.au/precsite/

588 PREPARING FOR COASTAL CHANGE
Project leaders: Adam D. Switzer (Malaysia), Craig Sloss (Australia), Benjamin Horton (USA), Yongqiang Zong (China)
Duration: 2010-2014
Website in preparation

O.E.T: On Extended Term

Funded projects	20
O.E.T.	10
Total	30

APPENDIX 8

Acronyms Used by IUGS

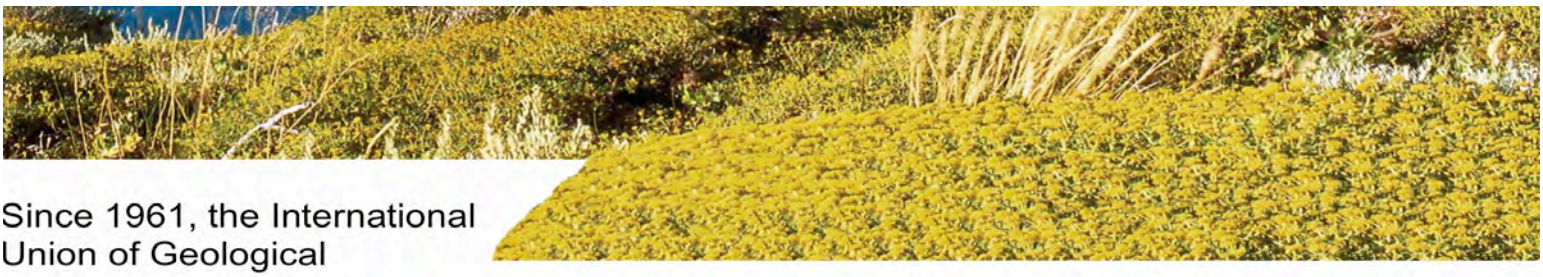
AAPG	American Association of Petroleum Geologists
AAS	NC for Solid Earth Sciences
AAS	Australian Academy of Science
AAWG	Association of African Women Geoscientists
AEGS	Association of European Geological Societies
AGA	Arab Geologist Association
AGA	Asociación Geológica Argentina
AGI	American Geological Institute
AGID	Association of Geoscientists for International Development
AGS	Albanian Geological Survey
AGSO	Geoscience Australia
AGU	American Geophysical Union
AIPEA	Association Internationale Pour l'Etude des Argiles
ANCG	Austrian National Committee for Geosciences
ANGPA	Asociacion Nacional de Geologos Profesionales Afines
ASRT	Academy of Scientific Research and Technology
Az NCG	Azerbaijan NC of Geologists for IGCP and IUGS
BGS	Belarussian Geological Society
BUMIGEB	Bureau of Mines and Geology of Burkina Faso
CBCG	Comitê Brasileiro de Ciências Geologicós, Brasilia
CBGA	Carpathian Balkan Geological Association
CCCDRLP	Coordinating Committee on Continental Drilling for International Lithosphere Program
CCOP	Coordinating Committee for Geoscience Programmes in E and SE Asia
CFES	Canadian Federation of Earth Sciences
CGI	Commission on the Management & Application of Geoscience Information
CGMW	Commission for the Geological Map of the World
CIFEG	International Center for Training and Exchanges in the Geosciences
CNFG	Comité National Francais de Géologie
CODATA	Committee on Data for Science and Technology
COGE	IUGS Commission on Education, Training and Tech Transfer
COSPAR	Committee on Space Research
COSTED/IBN	Committee on Science & Technology in Developing Countries
CPC	Circum-Pacific Council
DGRM	Direccion General de Recursos Minerales
DGSM	Department of Geological Survey and Mines
DINAGE	La Dirección Nacional de Geología
DMG	Direccion des Mines et de la Geologie
DNC	Danish National Committee for Geology
DOSECC	Drilling, Observation and Sampling of the Earth's Continental Crust
EAGE	European Association Geological Engineering
EASE	European Association of Science Editors
EGU	European Geosciences Union
EMU	European Mineralogical Union
ENCGS	Egyptian National Committee of Geological Sciences
EstNCG	Estonian National Committee for Geology
FCT	Fundação para a Ciência e Tecnologia
FNCG	Finnish National Committee for Geology

GARS	IUGS/UNESCO Program on Geological Application of Remote Sensing
GEM	Geoscience for Environmental Management
GMD	Geologisch Mijnbouwkundige Dienst
GRAS	Geological Research Authority of Sudan
GS	Geochemical Society
GSL	Geological Society of London
GSA (m)	Geological Society of America
GSA (f)	Geological Society of Africa
GSB	Geological Survey of Bangladesh
GSC	Geological Society of China
GSC	Geological Society of Croatia
GSD	Geological Survey Department, Cyprus
GSD	Geological Survey of Zambia
GSI	Geological Survey of Iran
GSI	Geological Society of India
GSMRB	Geological Survey and Mineral Resources Board
GSN	NC for Geological Sciences for New Zealand
GSN	GSN's Subcommittee for IUGS
GST	Geological Survey of Tanzania
GV	Geologische Vereinigung
IAEG	International Association of Engineering Geology and the Environment
IAG	International Association of Geomorphologists
IAGC	International Association of GeoChemistry
IAGC	The Indonesian Association of Geologists
IAGOD	International Association on the Genesis of Ore Deposits
IAH	International Association of Hydrogeologists
IAMG	International Association for Mathematical Geology
IAS	International Association of Sedimentologists
IAU	International Astronomical Union
ICL	International Consortium on Landslides
ICS	International Commission on Stratigraphy
ICS ISES	Subcommission on Ediacarn Stratigraphy
ICS SCCS	Subcommission on Carboniferous Stratigraphy
ICS SSC	Subcommission on Stratigraphic Classification
ICS SCS	Subcommission on Cretaceous Stratigraphy
ICS SDS	Subcommission on Devonian Stratigraphy
ICS SJS	Subcommission on Jurassic Stratigraphy
ICS SNS	Subcommission on Neogene Stratigraphy
ICS SOS	Subcommission on Ordovician Stratigraphy
ICS SPS	Subcommission on Paleogene Stratigraphy
ICS SPS	Subcommission on Permian Stratigraphy
ICS SSS	Subcommission on Silurian Stratigraphy
ICS STTP	Subcommission on the Terminal Proterozoic System
ICS-STS	Subcommission on Triassic Stratigraphy
ICSU	International Council for Science
ICSU-Africa	ICSU Regional Office for Africa
ICSU-Asia	ICSU Regional Office for Asia and the Pacific
IFPS	International Federation of Palynological Societies
IGCC	International Geological Congress Committee
IGCP	IUGS-UNESCO International Geoscience Program
IGEO	International Geoscience Education Organization
IGME	Institute of Geology and Mineral Exploration

IGU	International Geographical Union
ILP	International Lithosphere Program
IMA	International Mineralogical Association
IMGA	International Medical Geology Association
INGEOMIN	National Institute of Geology and Mining
INGEMMET	Instituto Geologico Minero y Metalurgico
INHIGEO	International Commission on the History of Geological Sciences
INQUA	International Union for Quaternary Research
IPA	International Palaeontological Association
IPA	International Permafrost Association
IRGM	Institute for Geological and Mining Research
ISCS	Subcommission on Cambrian Stratigraphy
ISPGJ	Albanian Geological Research Institute
ISPRS	International Society for Photogrammetry and Remote Sensing
ISRM	International Society for Rock Mechanics
ISSMGE	International Society of Soil Mechanics & Geotechnical Engineering
IUGG	International Union of Geodesy and Geophysics
IUGS	International Union of Geological Sciences
IUSS	International Union of Soil Sciences
IWGSSM	International Working Group on Sustainable Subsurface Management
IWGUG	International Working Group on Urban Geology
JGA	Jordanian Geologists Association
JMG	Minerals and Geoscience Department Malaysia
KazGEO	The Kazak Geological Society
Met. Society	Meteoritical Society
MGS	Ministère de l'Energie et des Mines
MIME	Direccion Nacional de Mineria y Geologia
MME	Commission for Geological Sciences
NC	Nominating Committee
NDG	National Directorate of Geology
NGWA	National Ground Water Association
ONM	Office National des Mines
ORGM	Office National de Recherche Géologique et Minière
PAGS	Pakistan Academy of Geological Sciences
PC	Publications Committee
ProGEO	The European Association for the Conservation of the Geological Heritage
RASAB	The Royal Academies of Sciences and Arts of Belgium
RNCG	Russian National Committee of Geologists
RSZN	Royal Society of New Zealand
SC-IGBP	Scientific Ctte. for the International Geosphere-Biosphere Prog.
SCAR	Scientific Committee on Antarctic Research
SCCT	Subcommission on Computing in Tectonics
SCFCS	Standing Committee on Freedom in the Conduct of Science
SCMR	Subcommission on the Systematics of Metamorphic Rocks
SCNS	Swedish National Committee for Geology
SCOPE	Scientific Committee on Problems of the Environment
SCOR	Scientific Committee on Oceanic Research
SDBP	Subcommission on Data Bases for Petrology
SECE	Commission on Solid Earth Chemistry and Evolution
SEG	Society of Economic Geologists, Inc.
SEPM	Society for Sedimentary Geology
SERGIOTECMIN	Servicio Nacional de Geologia y Mineria

SEUA	Laboratory of Experimental Seismotectonics
SGA	Society for Geology Applied to Mineral Deposits
SGCH	Sociedad Geologica de Chile
SGS	Saudi Geological Survey
SIS	Stratigraphic Information Services
SNIG	Sistema Nacional de Instituto Geografico
SPC	Subcommission on Precambrian Stratigraphy
SQS	Subcommission on Quaternary Stratigraphy
SSIR	Subcommission on the Systematics of Igneous Rocks
SSSR	Subcommission on Systemics of Sedimentary Rocks
TECTASK	Task Group on Tectonics and Structural Geology
TGGB	IUGS Task Group on Global Geochemical Baselines
TGPA	IUGS Task Group on Public Affairs
TIGG	Isotope Geology and Geochronology
UFRSTRM	CURAT – Science de la Terre e des Resources minieres
UNAM	National Committee for Geological Sciences
URSI	International Union of Radio Science
USNC	U.S. National Committee for IUGS
Uzbekistan NC	National Committee of Geologists of Uzbekistan
VUGS	Vietnam Union of Geological Sciences

* Acronyms used by the IUGS may not be appear in the 2010 Annual Report



Since 1961, the International Union of Geological Sciences (IUGS) has promoted the development of the Earth sciences through support of broad-based scientific studies relevant to the entire Earth system.

Help IUGS celebrate 50+ years as the global voice for the geosciences:

INTERNATIONAL GEOLOGICAL CONGRESS

EPISODES MAGAZINE

GLOBAL COMMISSIONS

TASK GROUPS

GEOLOGICAL STANDARDS

GEOSCIENCE EDUCATION

GEOINFORMATION

ENVIRONMENTAL MANAGEMENT

CONTACTS

President

Prof. Alberto C. Riccardi
Facultad de Ciencias Naturales y Nuseo
Universidad Nacional de La Plata
Paseo del Bosque s/n
1900 La Plata
ARGENTINA

Email: riccardi@museo.fcnym.unlp.edu.ar

Secretary General

Dr. Peter T. Bobrowsky
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A 0E8
CANADA

Email: pbobrows@NRCan.gc.ca

Treasurer

Prof. William Cavazza
Dipartimento di Scienze della Terra e Geologico-ambientali
Università di Bologna
Piazza di Porta San Donato 1
40126 Bologna
ITALY

Email: william.cavazza@unibo.it

IUGS Permanent Secretariat
MS-917
US Geological Survey
Reston, Virginia 2019, USA
Tel: +1-703-648-6050 Fax: +1-703-648-4227
Email: IUGS@usgs.gov

www.iugs.org | www.34IGC.org | www.episodes.org