



IUGS Commission on Geoscience Education, Training and Technology Transfer (IUGS COGE)

Summary Report (January/2012 – July/2016)

Commissioners

Jesús Martínez-Frías, Chair, Spanish National Research Council – Spain
Chris King, Vice Chair, Keele University – United Kingdom
Jennifer Nocerino, Secretary/Treasurer, Geological Society of America – USA
Gary Lewis, Former Chair, GEOetc. – USA
Ochir Gerel, Former IUGS VP, Mongolian University of Science & Technology – Mongolia
Chan-Jong Kim, Seoul National University – South Korea
Greg McNamara, Geological Society of Australia – Australia
Alan Morgan, Waterloo University – Canada
Ian Clarke, University of Adelaide – Australia
Adriana Niz, University of Catamarca – Argentina
Kmar Ben Ismail-Latrache, University of Tunis El Manar – Tunisia
Yamina Bourgeoini, Cadi Ayyad University – Morocco
Elyvin Nkhonjera, Community Economic Improvement Project, YES – Malawi
R. Shankar, Mangalore University – India
Miguel Cano, Bicol University – Philippines
Ashvin Wickramasooriya, South Eastern University of Sri Lanka – Sri Lanka

Overall objectives

The IUGS Commission on Geoscience Education, Training and Technology Transfer (COGE) was established in 2004 to examine and develop programs to assist developed and developing countries to maintain, expand or introduce better Earth Science education, outreach and technology transfer within their country.

The main objectives defined and approved by the IUGS are:

- Identify gaps in education, training and technology transfer both conceptually and geographically.

- Together with other relevant bodies in or outside the IUGS family, develop strategies for the coordination of existing and the development of new programmes in geoscience education, training and technology transfer based on the identified gaps.
- Produce a 5-year Action Plan together with an annual plan of action including budget.
- Organise meetings, conferences and workshops for geoscience educators and to disseminate information on new trends and topics in the field of geosciences.
- Develop specific programmes on the continuation and coordination of training courses, especially through generation of teaching materials and provision of training courses.
- Encourage publication of handbooks or textbooks at an international level to help bridge recognised gaps in the training of and education for geoscientists.
- Facilitate the harmonisation of geoscience presentation with different cultures in order to enhance the development of ethics in geoscience education.
- Assist in the distribution of geoscience teaching materials, including books, videos, equipment, etc.

Relate goals to overall IUGS scientific objectives

The IUGS aims to promote development of the Earth sciences through the support of broad-based scientific studies relevant to the entire Earth system; to apply 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; and to strengthen public awareness of geology and advance geological education in the widest sense. The scientific work of the IUGS is carried out primarily by Commissions, Task Groups, Initiatives, and Joint Programs.

The IUGS-Commission on Geoscience education training and technology transfer (IUGS-COGE) is the key tool of IUGS for developing geoeducational activities. The main goals of the commission follow the IUGS scientific guidelines, in accordance with its main role for fostering geoscience education and developing geoscience education and awareness for the benefit of society.

2012

Chief products and accomplishments

The activities of the Commission were developed in accordance with the proposed annual plan and the IUGS ARC recommendations (29 September 2011, Centro de Astrobiología (CAB), CSIC-INTA, associated to the NASA Astrobiology Institute, Torrejón de Ardoz, Madrid, Spain). The main activities carried out were the following:

a) The IUGS-COGE Chair and Vice-Chair were invited to the 40th anniversary of IGCP (IUGS-UNESCO) and the following Workshop on Earth Science Education (22.2-23.2.2012 Paris UNESCO Headquarters). UNESCO officials and the International Geoscience Education Organisation (IGEO) Chair also participated. At the meeting a project to develop a joint African Earth Science Initiative was formulated as part of

UNESCO's African Geoscience initiative, with the collaboration of IUGS-COGE, UNESCO and IGEO. The plan brought together ten of the African countries best-placed to develop an Earth science education initiative in an international 'launch-pad' conference. During the conference, delegates considered 'success stories' from across the world, and developed strategies for their own countries, with the support of educators with international geoscience education experience. These strategies were supported and monitored in subsequent years. This plan was integrated, in the context of our Commission, in the more general GEO-ERA project.

b) Following the ARC recommendations, IUGS-COGE approved the invitation of three new members (African Women Geoscientists) who joined the Commission: Kmar Ben Ismail-Lattrache (Tunisia), Yamina Bourgeoini (Morocco) and Elyvin Nkhonjera (Malawi).

c) IUGS-COGE had a significant organisational role in the 34th IGC involving responsibility for Symposium 1.2. Geoscience Education in the framework of Theme 1: Geoscience for Society. Two members of IUGS-COGE (current and the past Chairs of the commission) were involved in the symposium (Jesus Martinez-Frias, Convenor and Gary Lewis, co-Convenor). Meanwhile, Chris King (IUGS-COGE Vice Chair) contributed as co-Convenor in the Symposium 2.3. Developing geoscience education and awareness for the benefit of society in the context of the Theme 2: Geoscience Benefiting Low Income Countries. In this same Theme 2, IUGS-COGE (Jesús Martínez-Frías) took part as co-Convenor in the symposium 2.5. Geoethics (and in the international workshop on Geoethics). Greg McNamara (IUGS-COGE member and webmaster) was one of the keynote speakers of Symposium 1.2.

d) In addition, IUGS-COGE held an official meeting in Brisbane, with the participation of top-level members from other organizations (IGEO, AGID). Besides having a fruitful discussion regarding current and possible future activities (e.g. development of a specific action related to "geoscience education for politicians, policy makers and diplomats" also including Geoethics), the new IUGS-COGE logo of the commission was selected from 13 entries received by July 7 2012. The clear winner was the design by Lachlan Hewitt.

e) Following the excellent ongoing collaboration between IUGS-COGE and AGID over Geoethics, the IUGS-COGE Chair participated in the context of the official business meeting of the AGID International Working Group of Geoethics (Brisbane), in the foundation of the International Association for Geoethics (IAGETH). An official letter about it was sent (20 August 2012) to the IUGS President and IUGS Secretary General. IAGETH inherits more than 20 years of activities related to Geoethics, reflected in all International Geological Congresses since 1992, regular international meetings at Pribram (since 1992) and additional activity of the working group under the umbrella of AGID. The IUGS-COGE Chair was appointed as IAGETH First Vice President and webmaster (<http://tierra.rediris.es/IAGETH>). This new independent, international association is now extremely important in strengthening the links between geoscience education and geoethics, to be applied to many geoscientific activities.

f) Following IUGS-COGE recommendations, IUGS awarded Professor Nir Orion (Israel) to be a recipient of an IUGS Award for his outstanding contribution to Geoscience

education research over many years. The award was bestowed at the IGC and presented by the IUGS-COGE Vice-Chair.

g) IUGS-COGE and IAGD (International Association for Geoscience Diversity) organized, in the context of the 34th IGC, a Workshop (Workshop #30): Instructional Approaches to Access, Accommodation, and Inclusion for Students with Disabilities in the Geosciences. The instructors were Chris Atchison, Georgia State University; Brett Gilley, University of British Columbia and Gina Ceylan, University of Missouri. This course was designed to instruct current geoscience faculty (staff) and graduate teaching assistants in applying the principles of universal design to their own lessons, labs, and field trips in order to accommodate students with physical, cognitive and emotional disabilities. The presentation of this course included student instructors who discussed first-hand perspectives of negotiating the rigors of a geoscience curriculum while managing their disabilities. In addition, IUGS-COGE also had a booth at the GSA Annual Meeting in Charlotte, North Carolina, USA, 3-7 November, with IAGD.

h) Regarding the GEO-ERA (Geoscience Education Roadmap for Africa) project, IUGS-COGE Chair met Prof. Aberra Mogessie (President of GSAf – as our main GEO-ERA partner) to discuss the necessary steps to move forward.

i) IUGS-COGE updated its new website (www.iugscoge.com), thanks to our webmaster and commission member: Greg McNamara, including our new logo, the IUGS ARC recommendations and specific links to our news, current activities and related organizations.

Publications

- Atchison, C. and Martínez-Frías, J. (2012) Inclusive geoscience instruction. Correspondence. Nature Geoscience 5-6, 366.
- Martínez-Frías, J. and Mogessie, A. (2012) The need for a geoscience education roadmap for Africa. Episodes (in press).

Budget

The IUGS allocated the total amount of US \$5,300 for IUGS-COGE to operate its programs during 2012.

Total expenses (2012)..... US \$ 3012.04
Remaining..... US \$ 2287.96

** A significant point regarding the budget was stressed by Gary Lewis: he suggested that IUGS-COGE should look for another agency to manage its funds. At the moment his education program is covering an overhead component of 25% and this will not be sustainable into the future. A possible alternative is for that overhead component to come from the IUGS-COGE funds.*

2013

Chief products and accomplishments

In the context of the IUGS-COGE GEO-ERA (Geoscience Education Roadmap for Africa - 2012-2016) project, which was promoted by our commission in cooperation with the Geological Society of Africa (<http://www.iugscoge.com/geoera.html>), the IUGS-COGE Chair attended and acted as co-convenor (with F. Toteu (UNESCO), S. Gaines (UNESCO) and A. Mogessie (GSAf)) of the Session #7: Earth Science Education in Africa (24th Colloquium of African Geology/14th Congress of Geological Society of Africa, Ethiopia, 8-14 2013). A specific contribution was presented in the Congress (Martínez-Frías & Mogessie, 2013) entitled: “*The first steps of the IUGS-COGE Geoscience Education Roadmap for Africa (GEO-ERA): Development of an Africa-based glossary of geological terms*”. For this specific topic, we counted on the cooperation of some members of the YES group in Africa in order to undertake an internet data search on geoeducation in the continent. A specific collaboration was also initiated with ESM (recently affiliated to IUGS and a new partner of GEO-ERA) with the main goals of: a) retrieving quantitative data regarding geoeducation in Africa from different databases, and b) facilitating the transmission of this information to the public in a simple way.

Likewise, the IUGS-COGE again collaborated with the International Association for Geoscience Diversity (IAGD) at the 2013 Geological Society of America (GSA) Annual Meeting, held in Denver, Colorado, USA, October 27-30. This was the second year of the collaboration, which resulted in a combined exhibit of IAGD and IUGS-COGE resources at booth #113 in the GSA exhibit hall. These resources promoted the need for enhanced accessibility to geoscience education and workforce development for students and practitioners with disabilities. Members of the IAGD maintained the booth for all four days, holding many discussions with students and geoscientists alike, which resulted in an expansion of the network by nearly 50 people, and the potential for an exponential effect in passing on the information to others about the collaborative effort.

In the framework of the 1st International Congress of Stratigraphy (STRATI2013 - Lisboa, 1-7 July 2013), the IUGS-COGE Chair was invited to form part of the scientific committee, and to co-chair, with Dr. Patrick de Wever, a session entitled "Teaching of Stratigraphy, Geological Heritage and Geoethics" (Theme A. Principles and Methods) in a fruitful collaboration of our commission with the Geological Society of Portugal and the ICS (see publications).

Regarding the products and accomplishments in relation with the IAGETH, it is important to highlight that this association was recently approved (2013) as a new affiliated organization to IUGS. The last year, the IUGS-COGE Chair was appointed as IAGETH First Vice President and webmaster (<http://tierra.rediris.es/IAGETH>). Since January 2013, the IUGS-COGE Chair has been the President of IAGETH and was responsible for the presentation of its candidanship to IUGS in Paris (2013). As indicated in the last IUGS-COGE report, “*this new independent, international association will be extremely important in strengthening the links between geoscience education and geoethics, to be applied to*

many geoscientific activities". One of the main joint activities corresponds to the trilateral collaboration (IUGS-COGE-IAGETH-IUGS-HSTG). The IUGS-COGE Chair was invited between the 7th and 20th of July 2013, to the University of Salamanca (Spain), to give a talk and to participate in a roundtable discussion of the context of a successful and exciting International Encounter between students and professors from four European Universities: Salamanca, Coimbra, Ferrara and Budapest. This encounter is framed within an ERASMUS Intensive Programme: GLOGE 2012/2013 Global Heritage and Sustainability: Geological, Cultural and Historical and was organized by Dr. Lola Pereira. Global Heritage Stone is a project of the Heritage Stone Task Group (HSTG) of the International Union of Geological Sciences (IUGS) and the International Association for Engineering Geology and the Environment (IAEG) Commission C-10 Building Stone and Ornamental Rock.

Following the line of past years, our commission has also continued its cooperation with AGID. The IUGS-COGE Chair is the National Coordinator of AGID in Spain and member of the AGID working group of geoethics. Two specific websites (in which the IUGS logo appears) are managed, coordinated and hosted in the Spanish Thematic Network of Earth and Planetary Sciences (TIERRA). In addition, a specific EGU-EOS7 Session entitled "Geoeducation and Geoethics" was co-convened. This session comprised 6 oral communications (one of them presented by the IUGSCOGE Chair) and five posters.

In cooperation with the International Geoscience Education Organisation (IGEO) the development of a recommended syllabus for geoscience education in schools is close to fruition. The process involved:

- Gathering data on the Earth science content of existing syllabuses across the globe through IGEO and IUGS-COGE members
- Analysing the data to identify a core of Earth science included in the syllabuses of most countries which contributed
- Drafting a coherent syllabus on the basis of these findings
- Circulating the syllabus for comment amongst IGEO and IUGS-COGE members
- Making fairly major modifications to increase the coherence and presentation of the syllabus
- Circulating this second draft for comment

The comments received were included in a final version of the syllabus which was incorporated in a report recounting the process and the outcomes. The report formed the basis of a seminar held at the GeoSciEd VI Conference in India.

IUGS-COGE also supported plans for the forthcoming GeoSciEd VI conference being hosted by R. Shankar, one of the Commission members on the 5th – 9th September, 2014 at the University of Hyderabad, Hyderabad, India.

The Earthlearningidea initiative to publish interactive Earth science teaching ideas for global consumption, launched for the International Year of Planet Earth, and supported by IUGS-COGE and IGEO, had a significant geoeducational role. More than 170 activities were published in English, with a further 50 in the pipeline, at a publication rate of one every two weeks. ELIs are being translated into nine other languages, apart from English

(Catalan, Chinese,Mandarin), German, Italian, Norwegian, Portuguese, South Korean, Spanish and one in Tamil) with 387 translations so far.

Publications

- Calonge, A., Barrera, J.L., Aurel, M. & Martínez-Frías, J. (2013) A “Fighting for Geoscience Education in Spain. EARTH. March 2013. 8-9
- King, C. (2013) Geoscience education across the globe - results of the IUGS-COGE/IGEO survey. Episodes, 36-1: 19-31.
- Martínez-Frías, J. & De Wever, P. (2013) Teaching of Stratigraphy, geological Heritage and Geoethics. State of the Art. Ciencias da Terra 18: 43-49.

Budget

\$5285.00 was received from IUGS in early 2013

IUGS/IAGD collaboration 2012 1,184

IUGS/IAGD collaboration 2013 (as of 11/30/13) 892

Website maintenance 2,100

Website fees 2013 536

Postage Shipping & Freight 10

Stationary/Office Supplies 122

TOTAL spent \$4844

**\$441 remained from the original \$5285. However, these funds are managed by the Education and Outreach Department of the Geological Society of America. The Department is assessed an overhead component of 25% by GSA on these funds. For 2013 that cost has been \$965 through 11/30/13. It was stressed that future funds for the IUGS/COGE would need to include a 25% overhead component.*

2014

Chief products and accomplishments

In the context of the IUGS-COGE GEO-ERA (Geoscience Education Roadmap for Africa - 2012-2016) project, which was promoted by our Commission in cooperation with the Geological Society of Africa (GSAf), a progress meeting about GEO-ERA and other issues related to geoeducation in Africa was held in Johannesburg (South Africa) between Prof. Aberra Mogessie (GSAF President) and Prof. Jesús Martínez-Frías (Chair of IUGS-COGE). The meeting was held taking advantage of their participation in the 21st General Meeting of the International Mineralogical Association (IMA2014), and was very useful to analyzing the outcomes of the successful workshop on geoeducation promoted by the IUGS-COGE and the GSAf (Workshop TW5 – IUGS-COGE GEOERA Geoscience

Education in Africa). The workshop was co-chaired by Profs. Aberra Mogessie and Lopo Vasconcelos (GSAf), at the 25th Colloquium of African Geology (CAG25) held in Dar es Salaam, Tanzania. Detailed information can be found in the specific report hosted on the IUGS-COGE website. A specific collaboration was initiated in 2013 with ESM (recently affiliated to IUGS and new partner of GEO-ERA) with the main goals of: a) retrieving quantitative data regarding geoeeducation in Africa from different databases, and b) facilitating the transmission of this information to the public in a simple way. This collaboration, in which some members of YES are also involved, is currently in progress.

The IUGS-COGE again collaborated with the International Association for Geoscience Diversity (IAGD) at the 2014 Geological Society of America Annual Meeting, held in Vancouver, British Columbia, Canada, October 19-22. This year, many exciting events took place at the 2014 GSA Annual Meeting. For the first time ever, the IAGD held a completely accessible geologic field trip along the Sea to Sky Highway. Thirty-five geoscience instructors and students attended this trip; 17 of these individual had a physical or cognitive disability of some kind. Additionally, many presentations were given that promoted the work of the IAGD. This was also the third year for of the combined exhibit of IAGD and IUGS-COGE resources at booth #319 in the GSA exhibit hall. All of these events successfully highlighted the increased awareness of what the IAGD – IUGS-COGE collaboration has been working to achieve. The promotion of IAGD and IUGS-COGE resources showcase the need for enhanced accessibility to geoscience education and workforce development for students and practitioners with disabilities. Members of the IAGD maintained the booth for all four days, holding many discussions with students and geoscientists alike, which resulted in an expansion of the network by over 100 members from several countries (more than twice that of the same time period last year), and an exponential number of other people becoming aware of this strong collaborative effort. The IAGD network continues to build membership on a global scale. The Geoscience community is becoming even more cognizant of the importance of promoting effective geoscience instructional practices. Even more, as a result of collaborations like the IAGD/IUGS-COGE partnership over the past three years, the Geoscience community is becoming increasingly aware of the need to promote accessible and inclusive accommodations for students and geoscientists with diverse physical and cognitive abilities. Countries including India, Spain, Canada and the UK are becoming more involved in the IAGD network and promoting the awareness of inclusive geoscience instructional strategies, which should also be attributed to this collaboration between the IUGS-COGE and the IAGD. The IAGD continues to be very grateful for the collaborative support of the IUGS-COGE. This partnership at the Geological Society of America Annual Meeting provided an excellent opportunity to promote the international efforts of accessible geoscience education (2014 GSA Accessible Field Trip).

Regarding the products and accomplishments in relation with the IAGETH, and following the cooperation initiated in 2013 within an ERASMUS Intensive Programme on “Global Heritage and Sustainability: Geological, Cultural and Historical” (University of Salamanca, Spain), a specific contribution was presented in EGU 2014 (Vienna) (see Publications section) by the ERASMUS organizer and first author of the contribution, Dr. Lola Pereira. Global Heritage Stone is a project of the Heritage Stone Task Group (HSTG) of the International Union of Geological Sciences (IUGS) and the International Association for

Engineering Geology and the Environment (IAEG) Commission C-10 Building Stone and Ornamental Rock.

With regards to the fruitful cooperation with the International Geoscience Education Organization (IGEO), it is important to note that several IUGS-COGE commissioners actively took part in the 7th GeoSciEd Conference –September 5-9, 2014 at the University of Hyderabad, India (Prof. R. Shankar was one of the Organising Secretaries), and in the 8th International Earth Science Olympiad IESO 2014 – Spain.

Finally, following the line of past years, our Commission also continued its cooperation with AGID. The IUGS-COGE Chair is the National Coordinator of AGID in Spain and a member of the AGID working group of geoethics. Two specific websites (in which the IUGS logo appears) were managed, coordinated and hosted in the Spanish Thematic Network of Earth and Planetary Sciences (TIERRA).

Publications

- Mogessie, A. & Martínez-Frías, J. (2014) Progress meeting about GEO-ERA and geoeeducation in Africa in Johannesburg, South Africa. IUGS-COGE GEO-ERA section.
- http://www.geologicalsocietyofafrica.org/file/News_5412a2b60418d6.57105515.pdf
- Pereira, D., Martínez-Frías, J. & Mantovani, F. (2014) Geoeeducation and Geoethics: Implications in natural hazards communication and preservation of architectonic heritage Geophysical Research Abstracts Vol. 16, EGU2014-36, 2014.

**The IUGS-COGE Chair was invited to join the Editorial Board of the journal Episodes.*

2015

Chief products and accomplishments

In the framework of the IUGS-COGE GEO-ERA (Geoscience Education Roadmap for Africa) project, which was promoted by our Commission in 2012, in cooperation with the Geological Society of Africa (GSAf) as main partner, and the Earth Science Matters Foundation, a specific Survey about Geoscience Education in Africa was made and launched in June 2015.

« The Geoscience Education Roadmap for Africa (GEO-ERA) aims to provide the entire African continent with a roadmap to advance the target of geoscience education, training and technology transfer. GEO-ERA works under a multi-institutional framework taking into account the significant previous work carried out by other institutions (e.g. UNESCO Earth Science Education Initiative in Africa). GEO-ERA will provide a common framework for understanding basic theoretical and practical geoscientific issues, from a multidisciplinary point of view and with a geoethical approach, taking into account that Africa is one but also that the different countries and regions require tailor-made analyses.

GEO-ERA will be developed by Africans. GEO-ERA will increase the currently still scarce visibility of the contributions linking Geoscience Education and Africa through a set of concrete actions and the publication of thematic contributions in prestigious journals (i.e. Science, Nature, Journal of African Earth Sciences, Episodes) ». (see IUGS-COGE GEO-ERA).

Information and links to the survey were published in the IUGS-COGE website, GSAf website and in the GSAf Newsletter (Nr.6). Likewise, the survey was also widely distributed using the Facebook site of the Commission. Some YES members (African group) also assisted in the making and diffusion of the Survey. Some preliminary results of the survey were presented during the invited talk of the IUGS-COGE Chair in the Conference on Future of Earth-Space Science and Education (Future ESSE), which was organized by the IUGG in the ICTP, Trieste, Italy (2-6 November 2015). It is important to highlight the noteworthy participation in this Conference of the President of the IUGS and other top representatives of ICSU GeoUNions and international societies and associations. The survey will be active and running until 31 July 2016.

Over the past four years, the IUGS-COGE has collaborated with the International Association for Geoscience Diversity (IAGD) to provide a combined booth in the exhibit hall at the Geological Society of America Annual Meetings. This collaborative effort took place again at the 2015 GSA Meeting in Baltimore, Maryland, USA. Results from that collaboration include: (a) promoting shared resources, (b) holding inclusive instructional workshops, and (c) running field-based learning opportunities to raise awareness of accessible geoscience education on a global stage.

Regarding the products and accomplishments in relation with the IAGETH and in accordance with one of the foundational goals of our commission: *“Facilitate the harmonisation of geoscience presentation with different cultures in order to enhance the development of ethics in geoscience education”*, this is the procedural line of cooperation that we are following linking geoeducation and geoethics in many different activities, including, among others, inter-institutional partnerships, invited talks, seminars, training and capacity building activities and many other initiatives.

Cooperation with the European Federation of Geologists (EFG) was mainly focused on the international project that this organization is currently coordinating about raw materials (INTRAW project). INTRAW brings together an international consortium of 15 partners with extensive experience in research, innovation, education, industry, trade and international networking across the entire raw materials value chain. As part of the European Commission’s Horizon 2020 Programme for Research & Innovation, the 36-month project INTRAW was launched in February 2015 to foster international cooperation on raw materials. The EU-funded INTRAW project was set up to map and develop new cooperation opportunities related to raw materials between the EU and other technologically advanced countries, such as Australia, Canada, Japan, South Africa and the United States. The outcome of the mapping and knowledge transfer activities that are conducted in the first two years of the project will be used as a baseline to set up and launch the European Union’s International Observatory for Raw Materials as a permanent raw materials knowledge management body ([INTRAW, 2015](#)). The IUGS-COGE chair was

appointed as expert in one of the three INTRAW Panels: “Research & Innovation”, “Education & Outreach” and “Industry & Trade” and was invited to attend the first workshop, which was held in Bled (Slovenia, 15-16 September 2015).

In addition to the IUGS-COGE official website (www.iugs.com), many activities of our commission are also distributed using Facebook (<https://www.facebook.com/IUGSCOGES>), displaying more than 1,730 “Likes” so far. Both sites are managed by our webmaster Greg McNamara.

Publications

- King, C. (2015) The International Geoscience School Syllabus and Its Development. *Episodes* 38-1, 57-74.
- Martínez-Frías, J. (2015) Geoscience education, training and technology transfer. *Proceedings of the Conference on Future of Earth-Space Science and Education (Future ESSE) | (smr 2722)*, Theme : Future geoscience and education in the developing world 2-6 November 2015, Trieste, Italy
- Martínez-Frías, J. (2015) *Geosciences and Future Earth*. Geosciences. Special Issue. MDPI (in progress)

**The IUGS-COGE Chair was invited at the end of the last year to join the Editorial Board of the journal Episodes. His incorporation was effective in 2015.*

Budget

Funds from the IUGS for COGE are administered by the COGE Secretary/Treasurer and are held at the Geological Society of America (GSA). In 2015 IUGS/COGE received \$1485 from the IUGS. Additionally, \$1613 remained from 2014 which brought the total to \$3098. These funds were used in the following way:

- \$1000 Website administration and updates for 2015
- \$745 IAGD/IUGS-COGE Joint Booth fee at the 2015 GSA Annual Meeting
- \$330 IAGD/IUGS-COGE Joint Booth furnishings at the 2015 GSA Annual Meeting
- \$285 IAGD/IUGS-COGE Joint Booth copies GSA Annual Meeting
- \$340 phone fees

TOTAL Spent \$2700

2016

Chief products and accomplishments

The activities of the commission are progressing well in accordance with the established chart. We plan to continue accomplishing the:

- a) main objectives of the commission;
- b) ongoing, fruitful cooperation with different societies and associations and
- c) IUGS-COGE five-year plan approved by the IUGS.

Some of these initiatives and collaborations will be specifically focused on the progress of the GEO-ERA project and many other inter-institutional links (e.g. IUGS-COGE and IAGD) and with regards to the 35th International Geological Congress (35IGC, 27 August – 4 September 2016, Cape Town), in which several IUGS-COGE members will act as Theme Champions of the Theme: Geoscience Education and Public Communication.

Budget

Funds from the IUGS for COGE are administered by the COGE Secretary/Treasurer and are held at the Geological Society of America (GSA).

Budget request (only applicable to low income affiliates)

Website administration and updates	1000
IAGD/IUGS-COGE Joint Booth fee at the GSA Annual Meeting	800
IAGD/IUGS-COGE Joint Booth copies GSA Annual Meeting	300
IUGS-COGE GEO-ERA collaborations	1000
Postage, Supplies	250
Phone fees	100
TOTAL	\$3450

Jesús Martínez-Frías
Chair, IUGS-COGE