

European Association of Geochemistry



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INTRODUCING OUR NEW EAG COUNCILLORS

On behalf of all our members, we warmly welcome the five new councillors who joined the team in January 2018. They are **Caroline Peacock**, **Encarnación Ruiz Agudo**, **Sami Mikhail**, **Mihály Pósfai** and **Derek Vance**. We once again thank all the members who participated in the 2018 elections last autumn, which saw a record 42% turnout.



Caroline Peacock is an Associate Professor of Biogeochemistry at University of Leeds (UK). Her research focuses on the application of fundamental chemical principles to understanding Earth-system processes. In particular, she focuses on the environmental behaviour of nutrients and contaminants in water, soils and sediments, and the molecularscale reactions that determine the uptake and release of these elements from soil and sediment

minerals and microbes. In 2015, Caroline was awarded the EAG Houtermans Medal, and in 2016 she was granted a European Research Council Consolidator Grant to investigate controls on the preservation and burial of organic carbon in marine sediments. Caroline currently serves on several national and international research committees, and she leads the University of Leeds Cohen Geochemistry Group.



Encarnación Ruiz-Agudo is Assistant Professor in Crystallography and Mineralogy at the University of Granada (Spain). Her research interests include 1) non-classical mechanisms of mineral formation, including the formation of amorphous precursors and prenucleation species; 2) studies of surface mineral reactivity at the nanoscale; 3) silicate weathering and surface-altered layer formation. In 2012, she was awarded the Research Excellence

Medal of the European Mineralogical Union. Ruiz-Agudo coordinates several Spanish-government funded research projects aimed at gaining fundamental knowledge on silicate weathering and carbonation.



Sami Mikhail, lecturer at the University of St Andrews (UK), is the new Early Career Councillor at EAG, and he will also act as Student Program Leader for Goldschmidt2019 in Barcelona (Spain). His research is driven by the desire to understand how the interior workings of a planet influences its surface environment and how this relates to longterm habitability. To achieve this, he employs light volatile-element stable isotope data (C–N–O–Noble

gases) from natural samples and complements these data with both high-pressure/temperature experiments and theoretical models. These data are presently being applied to study diamond formation in Earth's mantle, high-temperature nitrogen geochemistry, and the fundamental relationships between mantle processes and atmospheric chemistry on Earth, Mars and Venus.



Mihály Pósfai, Professor of Environmental Science at the University of Pannonia in Veszprém (Hungary), has been elected to enhance representation of Eastern Europe within the council. Mihály obtained his PhD at Eötvös Loránd University, Budapest (Hungary), then continued as a postdoc at Arizona State University (USA), specializing in transmission electron microscope studies of nanoscale

phenomena related to environmental mineralogy problems. He is currently researching the biomineralization and biomimetic synthesis of magnetic nanostructures, the nucleation of carbonate minerals in freshwater ecosystems, and the properties and climate effects of individual atmospheric particles.



Derek Vance, Professor of Geochemistry in the Department of Earth Science at ETH Zürich (Switzerland), will be EAG Vice-President from 2019 and will act as co-chair for the Goldschmidt meeting in Barcelona in 2019. In the past, Derek has worked on mantle geochemistry and has used geochronology and metamorphic petrology to understand mountain belts, such as the Alps and Himalaya. For the past 10–15 years, however, he

has focused on understanding the geochemistry of the Earth's surface. This has involved quantifying the global cycles of trace elements via investigating their inputs to the dissolved pool of the oceans and their outputs as determined from various kinds of sediments. An important long-term objective is to use this effort, which is targeted at understanding modern geochemical budgets, to understand the overall chemical evolution of the Earth's surface.

Derek has previously served in various capacities with the Geochemical Society. He is currently a co-editor-in-chief for *Earth and Planetary Science Letters*, and has acted as an editor of *Geochemistry, Geophysics, Geosystems* and as an associate editor for *Geochimica et Cosmochimica Acta*.

We also would like to thank outgoing councillors **Janne Blichert-Toft**, **Vinciane Debaille**, **Stefanie Lutz**, **Andreas Pack** and **Dominik Weiss**, who have been crucial in developing several EAG initiatives. The entire EAG Council is very grateful for their dedication, commitment and support to our community.

FOCUS ON EAG SUPPORT FOR EARLY CAREER SCIENTISTS

Early career scientists form a vital part of the geochemical community, and the support of training and career development opportunities for young scientists is one of our most important and valued areas of activity. Two of our initiatives—the **Student Sponsorship** Program and the Early Career Science Ambassador Programaim to help young geochemists take part in conferences, workshops and short courses held around the world. The Student Sponsorship Program provides up to €500 to EAG student members wishing to attend events in Europe, and the Early Career Science Ambassador Program, a much-valued source of travel support for Europe-based early career scientists, covers 50% of travel expenses (up to €1,500) to attend geochemistry-related conferences outside Europe. Over 60 students and early career scientists have benefited from the two programs since their launch, enabling participation in events on all continents except Antarctica (so far!) and on topics as wide-ranging as magmatic processes, clay minerals, fluid inclusions, the cryosphere, serpentines, microbial processes, and palaeoclimatology, to name but a few. Reports from EAG-sponsored students and ambassadors feature regularly on the EAG Blog at http://blog.eag.eu.com/.

Application deadlines

Student Sponsorship Program: 1 February, 1 May, 1 September, 1 December.

Early Career Science Ambassador Program: 1 March, 1 June, 1 October.

For further information on these and other programs, visit http://www.eag.eu.com/early-career/.

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OUTREACH IN AFRICA

Over several years, the European Association of Geochemistry and the Geochemical Society have developed an outreach program to support geochemistry in under-represented regions of the world. This year, the two societies are sponsoring the recently launched Africa Initiative for Planetary and Space Sciences (AFIPS). In the invited contribution below, the AFIPS Steering Committee members describe the initiative, its history and goals.



Cheikh Ahmadou Bamba Niang (Doctorant at the Cheikh Anta Diop University, Senegal) measuring K, Th, U concentrations in impact melts at the Bosumtwi impact structure (Ghana) during a recent Ivory Coast–Senegalese–Ghanean– French expedition to Bosumtwi, as part of the Africa Initiative for Planetary and Space Sciences. PHOTO: DAVID BARATOUX.

The Africa Initiative for Planetary and Space Science

Africa has a large, but as-yet untapped, potential for participating in planetary and space science (Baratoux et al. 2017a). Africa possesses geological treasures that are eminently suitable for planetary analogue studies, not to mention meteorites (including the largest on Earth), clear skies on both sides of the equator for astronomers, and, above all, a young generation of researchers eager to participate in the exciting adventure of exploring our Solar System. Africa's potential for planetary and space sciences has been already exploited by a few pioneering scientists on the continent, but they face significant obstacles. In Africa, more than elsewhere in the word, funding priority is given to research programs with immediate or short-term impacts for society. But solving the pressing social and economic issues of the continent requires new ideas and innovations, which can be significantly strengthened by solid higher education and research programs in the basic sciences.



Panorama of Lake Bosumtwi with a seismological station from the Geological Survey of Ghana in the forefront. PHOTO: DAVID BARATOUX.



Cheikh Ahamadou Bamba Niang and Antoine Aginili Avo (Université Félix Houphouët-Boigny, Ivory Coast) examining a breccia during a recent Ivory Coast– Senegalese–Ghanean–French expedition to Bosumtwi. Photo: David Baratoux.

The Africa Initiative for Planetary and Space Science has been conceived by African researchers and those from other continents who are willing to contribute to Africa's economic, societal, ethical and cultural development (Baratoux et al. 2017b). These scientists are convinced that education and research programs in the planetary and space sciences will inspire a young generation of students toward scientific and engineering studies.

The first step of the initiative was to catalogue existing planetary and space science research capacity on the continent and to demonstrate that a community of African researchers exists who are ready to work together to elevate research and education programs in Africa through greater collaboration across borders. Expressions of interest and endorsements were also solicited from researchers and institutions beyond Africa. The initial census and call has attracted approximately 300 researchers from more than 20 institutions or international organizations (including African universities and pan-African organizations) who have now formally endorsed the initiative.

What are the next steps? Dedicated workshops will be organized in 2018 that will prepare a coordinated road map for planetary and space science education and research in several countries. This road map will consider the impact on society, local expertise, existing or emerging international collaborations, and the capacity to attract national and international funding. The first two workshops are being sponsored by the European Association of Geochemistry and by the Geochemical Society. Additional sponsors will permit the organization of more workshops and maintain a dynamic process of development by enlisting more African countries in the coming years.

Members of the Africa Initiative for Planetary and Space Science are (and will be) connected through the http://africapss.org platform to exchange information and opportunities about planetary and space sciences in Africa and beyond. Indeed, several members of this initiative are already involved in training African MSc and PhD students, focusing on new Africa-based research programs in planetary and space science.

Baratoux D and 26 coauthors (2017a) The state of planetary and space sciences in Africa, EOS 98, https://eos.org/features/the-state-of-planetary-and-space-sciences-in-africa.

Baratoux D and 26 coauthors (2017b) Africa Initiative for Planetary and Space Science. EOS 98, https://eos.org/opinions/ africa-initiative-for-planetary-and-space-sciences.

> Steering Committee of the Africa Initiative for Planetary and Space Sciences