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## Association of Applied Geochemists

### FROM THE PRESIDENT

Sitting here in the summer of 2007 it is hard to believe that two years have passed since I succeeded Dave Kelley as president of the Association of Applied Geochemists. During this time the Association has continued to develop, with more applied geochemists becoming active in the Association. Thanks to the upturn in the global mining industry, many resource and exploration geologists have joined the Association in order to improve their geochemistry skills.



Robert Bowell standing at the corner of Magma and Porphyry streets in Superior, Arizona (USA).

The upturn has led to increasingly busy members, and many active members in industry are finding it harder to donate time to the Association. A global shortage in qualified and experienced geochemists in the natural resources sector has only increased the demands on those already there. Sadly, due to lack of investment from the mining industry and government, there is a dearth of qualified graduates, and although there are signs that this is finally being addressed,

there is still a lag time. A challenge for technical universities will be to develop Earth scientists who have the necessary skills to be of benefit to the mining industry. A challenge for the mining industry will be to supply resources to support student programs. No less a challenge will be providing professionals in industry with the tools they need to do their work. We anticipate that our publications, workshops and symposia will provide opportunities for exchange of ideas and innovation. I believe our recent, successful symposium in Oviedo, Spain, organized by Prof. Jorge Loredo, succeeded in meeting these challenges.

Over the last two years, the Association has continued to develop resources to contribute to training and development. We are still building a research fund in honour of distinguished geochemists who have been active in applied geochemistry – geochemists like John Webb, Paul Theobald and Alan Coope. It is hoped that this fund will be self-sustaining and will support graduate research in applied geochemistry. In addition we support a Distinguished Visiting Lecturer program, and the current lecturer is Professor Kurt Kyser of Queen's University. Those interested in inviting Kurt can contact him through the AAG office.

Publications have been an important part of the Association's contribution to Earth science. Our flagship journal, *Geochemistry: Exploration, Environment and Analysis*, continues to mature thanks to the significant contribution of its editor, Gwendy Hall. The journal, now with a citation index, covers a wide range of themes in applied geochemistry. Apart from the dissemination of knowledge, we also keep members informed of news and current affairs through our quarterly newsletter, *EXPLORE*, now in the very capable hands of Beth McClenaghan, and through our website, managed by Bob Eppinger. Articles of a topical nature are always welcome and may be submitted to either of them.

In joining the *Elements* group, the Association has attained another

landmark in being able to better engage other scientific associations in similar fields. While there will always be some overlap in interest between such similar groups, I believe the strong industry participation in the AAG will bring an additional aspect to the *Elements* forum that will benefit all parties. The challenge for the AAG will be to identify members who have the time to take an active part in this unique inter-association forum and benefit others with their knowledge and experience. With Dave Cohen taking over as president and with the enthusiastic David Lentz as our representative on the *Elements* advisory board, I am sure that the Association will continue to take an active role in this forum.

**Dr. Robert Bowell**  
SRC Consulting, Cardiff, UK

### AAG GOLD MEDAL TO PROFESSOR XIE XUEJING



Professor Xie Xuejing is considered the father of exploration geochemistry in China. He conducted the first geochemical exploration in that country in 1951 in Anhui Province. He has also been instrumental in developing techniques to aid in the search for buried ore deposits. In his work on exploration for concealed deposits, he has developed two techniques for wide-spaced geochemical mapping in concealed terrains. One method, called Nanoscale Metals in EarthGas (NAMEG), involves analysis of soil gases collected onto polyurethane foam. The second method, called Mobile Forms of Metals in Overburden (MOME), involves sequential extractions of overburden material to measure (1) ions from water-soluble salts, (2) metals sorbed on clay minerals, (3) metals bound to organic matter, and (4) metals absorbed by oxides.

One of Prof. Xie's most remarkable achievements was his planning and technical supervision of China's Regional Geochemistry – National Reconnaissance (RGNR) Project. Over the past 28 years, this national-scale geochemical mapping effort has covered more than six million square kilometers in China. About six million samples (primarily stream sediments) have been collected throughout the country, and approximately 1.5 million composite samples have been analyzed. As a result of his work, China has the most remarkable national geochemical database in the world. According to statistics from the former Ministry of Geology and Mineral Resources, 517 mineral deposits have been discovered as a direct result of follow-up studies of anomalies identified by the RGNR Project. Prof. Xie played an important role in establishing the protocols for geochemical mapping at the global scale as a member of the steering board for the International Geological Correlation Program's Project 259 (International Geochemical Mapping). He continues to be an active member of the International Union of Geological Sciences Working Group on Global Geochemical Baselines.

Prof. Xie received one of the highest scientific honors in China when he was elected as a member of *Academia Sinica* in 1980. He is an adjunct professor at Changchun Geological College in Jilin Province and Beijing University. He has mentored seventeen master's and PhD students, who are now taking on leadership roles in geochemical exploration and environmental geochemistry in China.

23<sup>RD</sup> APPLIED GEOCHEMISTRY SYMPOSIUM, OVIEDO, SPAIN

The 23<sup>rd</sup> International Applied Geochemistry Symposium was held at the amazing Oviedo Congress Center, Oviedo, Spain. The conference's fourteen technical sessions were generously sponsored by Newmont, Anglo American, Rio Narcea Group, ACME Labs, SGS (labs), Actlabs and Klen International. The AAG thanks them for their generosity.



Spanish celtic entertainment (Gaiteros) in the streets of Oviedo preceded one evening's superb dinner

## Field Trips



The Agua Blanca Ni-Cu (-Co-PGE) deposit (southwest Spain) is the first economic Ni-Cu-(PGE) deposit found in southern Europe. It is an unusual example of magmatic sulfide ore as it is hosted by a subvertical magmatic breccia related to the development of an Andean-type continental magmatic arc.



The Rio Tinto deposit is located on the river of the same name in the Iberian Pyrite Belt. Mining in the Rio Tinto area seems to have begun during the Phoenician period (before the 10<sup>th</sup> century BC). This mine is perhaps the oldest major mine in the world, exploiting huge massive pyrite orebodies (Zn-Cu-Pb-Ag-Au) and their associated gossans.



The Almaden mercury deposit, Province of Ciudad Real, Spain, is composed of volcanosedimentary Hg ores hosted in quartzite and volcanic rocks (more information at [www.gl.rhul.ac.uk/geode/Variscides/Almaden.html](http://www.gl.rhul.ac.uk/geode/Variscides/Almaden.html)). Participants in the field trip also visited Cobra Las Cruces Cu-rich volcanogenic massive sulfide deposit in the Iberian Pyrite Belt and the ancient Las Medulas gold paleoplacer (UNESCO world heritage site).

Last, but not least, participants tasted many of the great wines of Spain, in the evenings, of course!

## Gala and Gold Medal Presentation



Professor Xie Xuejing, the AAG Gold Medal awardee

During the gala evening, the AAG's Gold Medal, our highest award, was presented to Prof. Dr. Xie Xuejing (China) for his outstanding scientific achievements in exploration geochemistry. The medal was minted from two troy ounces of silver bullion and will be engraved with his name. Prof. Xie joins other meritorious AAG Gold Medal recipients, like Gwendy Hall (2005), Robert W. Boyle (1999), Charles Butt (1995), and Ray Smith (1995). Part of the citation is reproduced on the previous page.



Outgoing past president Dr. David Kelley (manager, Americas Exploration Zinifex Limited) and his wife Dr. Karen Kelley (USGS Denver) enjoying the gala event

## Student Presentation Awards

Once again, the Association of Applied Geochemists conducted student presentation competitions at its biennial meeting in Oviedo, Spain, in June, 2007. More than 100 talks and posters were presented by applied geochemistry students, and the nine judges had a difficult time selecting among the large number of excellent presentations. The local organizing committee and the AAG would like to thank the judges of these competitions, Brenda Caughlin, Steve Cook, Bob Eppinger, John Gravel, Paul Morris, Ryan Noble, Mark Pirlo, Paul Polito, and Nigel Radford, for their efforts in identifying two sets of very deserving presentations, and they also thank Bob Eppinger for scrutinizing the results.

## Winners of the Student Talk Competition

FIRST PLACE: J. Bigelow and C.R. Stanley (Dept. of Geology, Acadia University, Nova Scotia, Canada)

- Geochemical controls on very coarse-grained Au mineralization within sheeted quartz veins at the mesothermal Callie Au deposit, Dead Bullock Soak, Northern Territory, Australia

HONORABLE MENTION: N. Reid, S. Hill, and D. Lewis (CRC-LEME, University of Adelaide, South Australia)

- Mineral expression and plant species differences at the Titania prospect: Biogeochemical sampling in the Tanami region, Northern Territory, Australia

HONORABLE MENTION: E.A. Holley, D. Craw, and J.P. Kim (Dept. of Geology, University of Otago, Dunedin, New Zealand)

- Gold-mining related and natural mercury in an orogenic greywacke terrane, South Island, New Zealand

## Winners of the Student Poster Competition

FIRST PLACE: A. Mohktari, D. Cohen, and S. Gatehouse (School of Biological, Earth and Environmental Sciences, University of New South Wales, Australia)

- Detection of deeply buried mineralization using ground conductivity and pH measurements.

HONORABLE MENTION: K. Khider and K. McQueen (Australia National University, Canberra, Australia)

- Gold dispersion in the calcrete zone, Girilambone region, Western New South Wales, Australia

HONORABLE MENTION: G. Garban and M. Martinez (Instituto de Ciencias de la Tierra, Universidad Central de Venezuela, Caracas, Venezuela)

- Rare earth, major, and trace element composition profiling of bedded chert and siliceous shale sequences across the Santonian-Campanian boundary in western Venezuela.

Congratulations to all the student presenters for their excellent efforts in conveying their thesis research to the scientific community!