Association of Applied Geochemists

www.appliedgeochemists.org

FROM THE PRESIDENT

Ryan Noble, President AAG

My first From the President in *Elements* (Feb. 2016) highlighted my path into service for the Association of Applied Geochemists (AAG) and the collaborative benefits that I had gained from being a student member. The AAG has a smaller, collegiate-feel for applied geochemistry, and we are keener than ever to build our student member numbers. Student membership is only $10 and includes our journal, *Geochemistry: Exploration, Environment, Analysis (GEEA)*, our newsletter *Explore* and a number of student-focused awards and programs, including one for analytical support. At $10 it is exceptional value.

As part of my commitment to increasing our younger membership, the AAG offers valuable student funding and support services. These include the following:

1. Analytical support (in-kind)

2. Conference travel funding

3. Conference presentation and publication awards

4. Abstract fee funding

The analytical support program enables some research samples to be analysed at our participating laboratory partners (Actlabs, ALS, Bureau Veritas Minerals Acme, Bureau Veritas Minerals Ultratrace, Intertek Genalysis, LabWest). These analyses are done at either no cost or a significantly reduced cost to the student. The AAG facilitates deserving students to get the needed analyses done, and our committee also assists in getting this research published in our journal *GEEA* or the *Explore* newsletter at a later time.

Conference travel funding is offered to support student attendance primarily at our International Applied Geochemistry Symposia (IAGS). The next IAGS is in Vancouver (Canada) in June 2018 as part of the Resources for Future Generations conference (RFG2018 http://rfg2018.org/): we hope to support a number of students for their conference fees and, potentially, some travel/accommodation costs (to a set value). The AAG will also offer improved student paper and poster prizes at the upcoming IAGS in Vancouver, thanks in part to our sponsors, SGS Minerals.

Finally, the AAG expects to reimburse students for all abstract fees incurred by submitting to RFG2018 if the student is presenting in an IAGS-affiliated session. All details are available on our website or will be updated shortly as the RFG2018 program develops. See https://www.appliedgeochemists.org/

It is worth your time as a student to join the AAG and get involved. I hope to meet many more students presenting their research at our upcoming meetings and developing the necessary collaborations for a strong future career in applied geochemistry.

Ryan Noble
AAG President

UPDATE ON INTERNATIONAL APPLIED GEOCHEMISTRY SYMPOSIA (IAGS) 2018

Peter Winterburn, Chair, IAGS 2018 Organizing Committee

The AAG has partnered with the Resources for Future Generations 2018 (RFG2018) conference, which is to be held 16–21 June 2018 in Vancouver (British Columbia, Canada), to hold the IAGS2018 symposium as an integral component of the RFG18 conference. The 4-day conference will cover a wide variety of topics on energy, minerals, water and the Earth and is expected to attract in excess of 5,000 attendees to Vancouver. This will provide the AAG with the opportunity to showcase, through specific AAG sessions, the advancements and applications of geochemistry in the spheres of exploration and environment.

Eleven AAG-specific applied geochemistry sessions will be chaired by AAG members. Details of the sessions are provided below. The call for abstracts opened on 1 August 2017 and will close on 15 January 2018. Submissions of abstracts to the AAG sessions, as well as registration, short course and field trip selection, will be handled through the RFG2018 website at http://rfg2018.org. The abstract submission process will allow the selection of the specific sessions for submissions. Members of the AAG are encouraged to submit abstracts to the appropriate AAG sessions. Registration at the conference will also allow AAG members full access to the complete RFG2018 technical sessions.

A series of short courses and field trips are also being organized by the AAG for inclusion in RFG2018.

For further information, visit RFG2018.org or contact Dr. Peter Winterburn at pwinterburn@eoas.ubc.ca

AAG Sessions at RFG2018

MIN24 "Stable and Radiogenic Isotope Systems: Applications in Exploration and the Environment." Modern analytical technology has substantially reduced the cost of isotopic analysis to the level of routine analysis. In addition, new systems have become commercially viable and the knowledge base and understanding of a range of isotope systems is now well documented. This session will demystify the application of isotopes in exploration and the environment through case studies that will demonstrate the value and the added benefits of integrating isotope studies with other information in exploration decision-making processes.

MIN25 "Exploration Case Studies – Out of the Box Concepts, Methodologies and Practices." Case studies of mineral exploration, both positive and negative, will be highlighted, with an emphasis on the application of geochemistry. Particular emphasis will be given to case studies that employed out-of-the-box concepts, models or methodologies and that demonstrated new advances in mineral exploration, discovery, risk abatement and cost reduction.

MIN26 "Big-Data: Integration, Management and Regional-Scale Surveys." Exploration companies, geological surveys and mining companies typically own gigabytes to terabytes of geochemical information with associated attributes, much of which is poorly examined beyond simple numerical treatments for limited components.

MIN27 "Footprints of Giant Orebodies." Over the last five years, across the globe, there have been several major research initiatives by organizations [e.g. Canada Mining Innovation Council (CMIC) and AMIRA

International Ltd.] directed at developing fully integrated geological, mineralogical, chemical and geophysical footprints of large orebodies beyond visible alteration to so-called cryptic effects. This session is intended to draw together key papers highlighting integrated models and their application to exploration.

MIN28 "Micro- to Macro-Biogeochemistry: Exploration, Processing, Remediation and the Environment." Biological systems play an increasingly significant role in mineral exploration, mineral processing and site remediation and such systems can exploit the natural interactions and processes between geological materials and biological processes. This session will review recent progress and new innovations in the use of natural processes in resource development.

MIN29 "Exploration Undercover – Techniques, Technology and Strategy." Demands for mineral resources continue to affect society: there are high metal prices, skill shortages, governmental policy changes, and billions of dollars in resource investment. The discovery of new mineral resources requires increasing risk, increasing costs, and increasingly effective exploration techniques. Exploration activity itself is increasingly focused in difficult localities, such as those that lack outcrop, are covered by transported surficial materials or are deeper in the crust. As a result, the demand to develop new and improved geochemical exploration techniques and strategies is higher than ever. This session will include papers that review state-of-the-art progress, new concepts, technologies, case histories and exploration strategic paths aimed at discovery.

MIN30 "Mineral Exploration in Extreme Environments." Exploration geochemistry in hyper-arid, tundra, tropical, high altitude, sub-oceanic and extra-planetary environments requires special techniques and technologies. This session will be devoted to research, development and case histories of mineral exploration in these diverse, significantly more important, yet very problematic environments. The emphasis will be on applied geochemistry.

MIN48 "Hydrocarbons in the Exploration for Metalliferous and Non-Metalliferous Deposits." Hydrocarbons have shown considerable potential as an exploration tool for the discovery of mineral deposits. However, the technique is not without controversy. Through case studies and recent technological advances, this session will present recent results on the application of hydrocarbons in mineral exploration.

MIN55 "Analytical Technology in the Search for Minerals: Space to the Lab to the Field." A session devoted to recent, experimental and proposed developments in technologies that could be applicable to the discovery of new mineral deposits and environmental studies. The emphasis will be on chemical, mineralogical, isotopic and spectral analytical techniques, including remote sensing, laboratory analysis and field analysis.

MIN57 "Geometallurgy: Exploration–Evaluation–Exploitation–Environment." This session will examine the roll of geometallurgy and geochemistry through the complete birth–cradle–grave cycle of an orebody, documenting how geometallurgy can effectively reduce risk and cost at an early stage of exploration through evaluation and mining, and through to the impact of geometallurgy on waste disposal and mine closure. The session will comprise a keynote plus selected case studies of the application of geometallurgy, in particular novel or unconventional applications to natural resources.

WA14 "Hydrogeochemistry: Environment and Exploration." A session devoted to the application of water geochemistry as both a tool to search for water resources and mineral resources, in addition to exploring the geochemistry of contaminated waters and their mitigation and remediation. The session will cover research and development of new techniques and technologies in addition to case histories of hydrogeochemistry in exploration and remediation.

WA17 "ARD in Mining and Civil Construction." Acid rock drainage (ARD) and metal leaching (ML) are potential hazards that should be assessed at an early stage when planning major excavations for resource development or civil construction. Potential acid-generating materials can be predicted based on static and kinetic testing. This information forms an essential component of ecological risk assessments that also incorporate information on pathways and receptors that could be affected by ARD/ML. Such risk assessments should be incorporated at an early stage into the engineering design of excavated material placement areas in order to minimize environmental impacts.

AAG Short Courses and Field Trips at RFG2018

The AAG has proposed 8 short courses operated by renowned AAG members covering both theoretical and practical aspects of exploration and environmental geochemistry. These comprise:

- Analytical Quality Control: Data Integrity for the Advancement of Science (L. Bloom)
- Exploration Geochemistry: From fundamentals to the field (P. Winterburn)
- Regolith in deeply weathered terrains (R. Anand)
- Integration of Exploration Geochemical and Mineralogical Data (D. Arne)
- Advanced Concepts in Evaluating and Interpreting Geochemical Data (E. Grunsky)
- Mineral Chemistry – Application to Mineral Exploration (C. Ihlenfeld)
- Lithogeochemistry: Theory and application from project generation to operation (I. Dalrymple)
- Exploration Geochemistry: Field analysis and characterisation (B. Lemiere)

Excursions organized through the AAG include:

- Yerington Porphyry Lithogeochemistry field trip in Nevada (USA) with D. Tosdal and J Dilles
- Lithogeochemistry and Alteration at the Highland Valley Porphyry Complex in British Columbia (Canada) with K. Bryne
- Visits to the ultra-modern analytical facilities at ALS Vancouver - Geochemistry and Bureau Veritas in Vancouver (British Columbia, Canada)

Additional field trips are still in preparation.