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From the President



As I write this message, my challenge as IAGC President for the two-year term is close to an end. Approaching the transition period between the President and the past-President position, I would like first to thank Ian Cartwright for his dedication to the IAGC as he transitions out of the Past President position. I also would like to welcome Neus Otero, current Vice President and who will take over the IAGC President role in 2019. Finally, I am happy to announce that Jodie Miller from Stellenbosch University, South Africa will be the next Vice President.

Within my 2-year term as President, the largest changes in the Association concern our IAGC-sponsored meetings. During the last AIG meeting in Copper Mountain, the council agreed on a new meeting format. Under the leadership of two former IAGC Presidents (Richard Wanty 2012-2014 and Russell Harmon, 2010-2012) and with the help of Yousif Kharaka and Tom Bullen and the Council, we decided to create a unified IAGC International Conference. The first event of this new era will be the WRI-AIG conference in Tomsk under the umbrella of two of the historically largest working groups (GES being

the third). However, as GES had already initiated the planning process for its next meeting in Switzerland, the second fully-consolidated conference involving all Working Groups will be held in 2021. Please check the IAGC website (www.iagc-society.org) for details or Tomsk meeting web site (http://wri16.com/).

The second important activity of my tenure concerns *Applied Geochemistry*, the official journal of the Association. Michael Kersten has agreed to renew his position as Executive Editor of *Applied Geochemistry* after again volunteering for this role and having had the enthusiastic validation of the council. Michael will therefore continue on as the Executive Editor for the next three years. In the future we will need to determine the construction of his succession because this mandate will be the last. Moreover, we hope to see more review articles in *Applied Geochemistry* and a continued clear increase in the science citation index. This is something where you, the members, can help to provide support to your journal by submitting some of your best research results. Consider *Applied Geochemistry* when planning to write a review article and discuss your idea with Michael Kersten (kersten@uni-mainz.de) should you have such plans. Thanks to Clemens Reimann, former IAGC President for the ideas and text (IAGC Newsletter 54, 2011).

Last but not least, 2018 was the year of the passing two IAGC luminaries – Tom Bullen and Mel Gascoyne. Tom was a Research Hydrologist at the U.S. Geological Survey, a former IAGC Secretary from 2008 to 2014, and helped significantly in organizing AIG and WRI meetings. Tom will always be known for his commitment to science and his ever-friendly and positive nature. Mel was a senior scientist at Atomic Energy of Canada Ltd. and later ran his own geoscience consulting company. He served as IAGC Secretary from 1992 to 2004 and later Business Manager from 2003 to 2010. Mel very generously donated his time to the IAGC and *Applied Geochemistry* over many years. The IAGC and the geochemistry community at large mourn the passing of these great scientists, friends, and colleagues. For more, I encourage you to read the remembrances published in *Applied Geochemistry* for both Tom and Mel - Shouakar-Stash et al., 2018 (doi.org/10.1016/j.apgeochem.2018.10.004); and Harmon, 2018 (doi.org/10.1016/j.apgeochem.2018.08.018) as well as in the IAGC Newsletters.

Finally, I thank the officers, Council, and the Business Office Manager for all the help I received during the two years of my President term, and wish the best for the Association and for the incoming officers. I will remain active and strongly supportive of the Association.

Philippe Négrel
BRGM

Introducing our new Vice President

By Jodie Miller, Stellenbosch University, South Africa



Although I started out in metamorphic petrology, these days I regard myself as an Earth Scientist with diverse research interests in isotope geochemistry and mineralogy. Much of my work focusses on isotope hydrology and examines the relationship between surface water and groundwater systems particularly in semi-arid and arid climates on the west coast of southern Africa. The long-term goal is to better understand the sustainability and vulnerability of groundwater systems and how they will be affected by climate change. In

addition to this work, I also continue to work in the field of mineralogy with respect to minerals processing and am interested in novel ways in which isotopes can be used to track the minerals processing value chain. Outside of research, I am passionate about teaching and particularly helping students from disadvantaged backgrounds. I have supervised over 60 postgraduate students from honours level through to PhD and have been the programme coordinator for Earth Sciences at Stellenbosch University for over 10 years. I look forward to serving the IAGC over the next several years and continuing our mission to promote cooperation and education in geochemistry around the world.



Tom sailing in San Francisco Bay (2013)

A Remembrance of Thomas (Tom) Bullen, 1951 - 2018

Thomas Darwin Bullen, a Research Hydrologist at the U.S. Geological Survey and a former Secretary of the International Association of GeoChemistry (IAGC) from 2008 to 2014, passed away on September 7, 2018 after struggling with Glioblastoma Multiforme for almost two years. Tom was a distinguished scientist who had a career of distinguished scientific contributions and enthusiastic services to the geochemistry community. He graduated from Dartmouth College, New Hampshire, in 1972 with B.S. in Engineering Geology and later obtained a M.A. in Geology in 1978 from the same institution, and later his PhD in Geology from the University of California, Santa Cruz in 1986.

Tom joined the U.S. Geological Survey, Menlo Park in January 1987, initially in the Branch of Igneous and Geothermal Processes to conduct isotopic investigations of igneous rocks from the Lassen region of the Cascade Range. In 1990, Tom moved to the National Research Program (NRP), Water Mission Area, and continued there until his death at the age of 67. A scientist emeritus since 2014, Tom remained extremely active in research and collaborations worldwide.

Tom's primary research focused on the use of metal and metalloid isotopes (e.g., Cr, Fe, Ca, B, Se and Te stable isotopes and Sr radiogenic isotopes) and water chemistry to understand hydrologic and biogeochemical processes at scales ranging from mineral-water interfaces to water flow paths in watersheds and regional aquifers. He developed and refined methods to determine the isotopic composition of metals and metalloids in water, rocks and other natural materials, using thermal ionization mass spectrometry (TIMS) and multi-collector inductively coupled plasma mass spectrometry (MC-ICP-MS). Tom developed isotopic methods that are used to improve understanding of water-rock interactions in natural and contaminated systems and to advance environmental science. In many cases, Tom's isotopic data and his interpretations of the observed isotopic variations were among the first reported in the literature. Furthermore, Tom had a long-standing interest in the science of small watersheds, large aquifers, contaminant transport and fate, human health and biogeochemical tracing techniques in general. His latest research studies were focused on developing novel metal stable isotope tracing techniques to understand hydropedological processes in forested watersheds and to determine the sources, transport mechanisms

and fates of metals deposited on those watersheds as dust.

Tom collaborated with many colleagues and students from national and international institutions. His ultra-clean isotope laboratory in Menlo Park provided high quality isotope measurements of the metals and metalloids for the USGS (NRP and California and other Water Science Centers) and outside investigators through collaborative interactions. He was particularly strong in the conceptualization, development and execution of inter-disciplinary studies that utilize isotope tracers in novel ways to address a variety of scientific issues. Since 2008 Tom had an ongoing collaboration with scientists from the BRGM, Orléans, France, where he worked on the development of a technique to determine the oxygen isotope composition of chromate to determine sources of chromium contamination in groundwater, and the development of metal stable isotope multi-tracer approaches during a sabbatical year. Furthermore, Tom served on PhD committees where he shared his knowledge and experience with graduate students. Up to his death, he was an Adjunct Professor at the University of Waterloo in Canada.

Tom's research was characterized by the quality and number of his publications. He authored and coauthored more than 100 peer reviewed journal and conference papers over the course of his career. He was invited to write overview chapters for books and to coordinate syntheses on the topic. One publication (Bullen, T.D., 2011, Stable Isotopes of Transition and Post-Transition Metals as Tracers in Environmental Studies *in* Baskaran, M., ed., Handbook of Environmental Isotope Geochemistry, Springer-Verlag, p. 177-204) is the first such article that encompasses this new field of biogeochemical research. He authored a major chapter for the 2nd edition of the Treatise on Geochemistry (Bullen, T.D., 2014, Metal Stable Isotopes in Hydrology and Weathering).

In the geochemical community, Tom is best known for his hard work and commitment during his six-year service as the IAGC Secretary. Tom served with energy and enthusiasm during a critical time for the IAGC as it moved to position the organization to a place in the geochemistry community where it could be sustained and grow. Developing and implementing a procedure for regular communication with the membership was an integral part of this transition. As a member of the IAGC leadership team, Tom always offered thoughtful and progressive counsel. IAGC is definitely a much stronger organization today because of Tom. Furthermore, he was instrumental in helping organize multiple AIG meetings over the years, including organizing AIG-4 in Monterey, CA, June 2001. Moreover, Tom was extremely active at WRI meetings, and he was the senior editor of the proceedings of WRI-12 (Kunming, China) in 2007 and did more than his share of reviewing numerous submitted manuscripts. Tom received the IAGC Harmon Distinguished Service Award in 2015 in appreciation of these and other contributions to IAGC.

To his many friends and colleagues around the world Tom will always be known for his commitment to science and his ever-friendly and positive nature. The IAGC and the geochemistry community at large mourn his passing at such a young age.



Tom at Asilomar Beach, California, AIG-4 meeting (2000)

Beyond work Tom lived a robust and varied life. He loved travel and was able to visit all 7 continents. Trips to Hawaii, Bali, Europe, Mexico, New Zealand, etc. were frequent, some of which involved collaboration for work, some just for vacation. He had the pleasure of working for a year near Orleans, France where he broadened his love for good food and wine. Living near wine country in California Tom discovered the charms of red wine. (He was also not one to decline a nicely chilled, super dry, Vodka martini … two olives minimum, please). Tom was an avid sailor enjoying sailing San Francisco bay as well as charting boats elsewhere in the world. After "retirement," he rediscovered the joy, and heartache, of golf. One distinguishing trait of Tom was that he was never bored. He always had ideas to work out in his mind, be it Isotope Geochemistry or a workable pattern for pavers to be laid in the patio. He almost always had a smile on his face and a good word to say. Although cut short, no one can deny that Tom lived a full life.

Tom's most significant research contributions:

1. Bullen, T.D., and Eisenhauer, A., 2009, Metal stable isotopes in low-temperature systems: A primer: Elements, v. 5, no. 6, p. 349-352. *[Tom was lead editor for this high impact overview of the new science of metal stable isotope geochemistry. With a regular readership of ~15,000 earth scientists, this issue served as an introduction of the topic to a very broad new audience]*
2. Bullen, T.D., and Walczyk, T., 2009, Environmental and biomedical applications of natural metal stable isotope variations: Elements, v. 5, no. 6, p. 381-385.
3. Bullen, T.D., 2011, Stable Isotopes of Transition and Post-Transition Metals as Tracers in Environmental Studies *in* Baskaran, M., ed., Handbook of Environmental Isotope Geochemistry, Springer-Verlag, p. 177-204. *[This is the first publication that encompasses the greater field of transition metal stable isotope geochemistry and its particular applicability to environmental science. The particularly novel aspect was the demonstration of the value of using multiple isotope systems together in a multi-tracer approach, rather than relying on the results of single system analysis.]*
4. Izbicki, J.A., Bullen, T.D., Martin, P., and Schroth, B., 2012, Delta Chromium-53/52 isotopic composition of native and contaminated groundwater, Mojave Desert, USA: Applied Geochemistry, v. 27/4, p 841-853.

Ingerson Lecturer at the 1st IAGC International Conference - François Chabaux



The IAGC is happy to announce that the Ingerson Lecturer for 2019 will be François Chabaux. François will be presenting his lecture at the 1st IAGC International Conference in Tomsk in July, 2019. Support for the Ingerson International Lecturer is based on a bequest by Dr. Earl Ingerson, first President of the Association.

François Chabaux is a Professor of Geoscience and Geochemistry at the "Ecole et Observatoire des Sciences de la Terre (EOST)" at the University of Strasbourg, France. He is Associated Researcher of the GEOTOP at Montréal, Canada and Visiting Scientist at the Institute of Surface-Earth System Science (ISESS) of the Tianjin University, China. He is « Chargé de mission » (Policy Officer) at the

department "Continental Surfaces and Interfaces" of the INSU-CNRS, France.

François has focused his scientific activities for the last 25 years on the study of the mechanisms and time constants of weathering and erosion processes in critical zone by developing and using elemental and isotopic geochemistry approaches. François has been highly involved in the development and application of the methodology of U-series nuclides to constrain the time scales of weathering and erosion processes in the critical zone. His works have largely helped to popularize these approaches. He was also highly involved in the application and development of geochemical tracing approaches, including the classical (Sr, Nd, Pb) radiogenic isotopes, U-Sr isotopic coupling and new stable (Ca, B, Li) isotopes, to depict the main processes involved in biogeochemical and hydrogeochemical cycles. More recently he also investigated the nature of water-rock interactions controlling the chemical composition of waters in watersheds and aquifers by applying coupled hydrogeochemical modeling approaches. An important part of his work was carried out on the Strengbach watershed (OHGE : Observatoire HydroGéochimique de l'Environnement), in Vosges mountains, France, contributing largely to making this watershed one of the current reference or emblematic sites of the French critical zone observatory network (OZCAR).

François Chabaux was awarded a PhD at the University of Paris VII in 1993 on the U-series nuclides in volcanic rocks, under the supervision of C. Allègre. He was later research and teaching Assistant at Université Paris 7 and then at the IPGP, France. In 1993-1994, he was Research Associate at the University of Cambridge, UK. He was appointed Assistant Professor for Geochemistry at the University of Strasbourg in 1994, Full Professor in 1998.

News from Michael Kersten, *Applied Geochemistry* Executive Editor



Just a few journal updates. First of all, I've agreed to serve another term of three years as Editor-in-Chief until end of year 2021. As already mentioned in the spring issue of this newsletter, we've managed to bring the IF up to 3, hope to rise it further within that term up to 4. For this to foster, we have been active in soliciting and encouraging colleagues to edit quite attractive Special Issues. The next in the row to be published soon is on "Water rock interaction from field to modeling through lab experiments: A tribute to Mike Edmunds", edited by Thomas Kretzschmar, Philippe Negrel and Yousif Kharaka. Another one is on the outcome of "The 7th International Conference on Clays in Natural and Engineered Barriers for Radioactive Waste Confinement", edited by Andreas Gautschi, Irina Gaus, Thomas Gimmi, Martin Mazurek, Paul Wersin, Michel Cathelineau and Adrian Bath. The third one is on the "Chemistry and Migration Behaviour of Actinides and Fission Products - Science for a safe long-term radioactive waste management", with articles related to the Migration 2017 conference in Barcelona edited by Lara Duro and Jordi Bruno. Please refer to the journal homepage for further information. For example, there is currently a call for submissions on a SI entitled "Soil Pollution and Reclamation" (https://www.journals.elsevier.com/applied-geochemistry/call-for-papers/special-issue-soil-pollution-and-reclamation), to be edited by Jaume Bech, Ron Fuge, Elena Korobova, M. Manuela Abreu and Carmen Pérez-Sirvent. Clearly, papers to be submitted should go beyond the simplistic contaminant monitoring data

reports and mapping, and at best include process-related research results for an innovative, gentle and economically feasible new methodology of site reclamation based on accurate knowledge of soil biogeochemistry.

Clearly, editing a journal issue is an exciting process, but compiling of those Special Issues was also quite a tremendous peace of work for all our Guest Editors. They skillfully performed the difficult task of getting two reviewers for each paper (up to over 30 for an SI), reading the reviews, suggesting a judgement, and writing a draft decision letter as fair and objective as possible. If a paper is to be rejected to whatever reason, we all do it in a respectful and timely manner. As Editors, we are certainly not perfect and try to avoid misjudgment as far as possible under such a workload. For that, we ask for patience and fair communication.

Other valuable contributions are the long review type papers, in particular on singular elements like iodine, arsenic, tellurium and molybdenum currently among the most cited articles (see the journal webpage for the whole list). Clearly, there is potential for such feature articles, and another such review on vanadium has just been submitted by our Associate Editor Jon Petter Gustafsson. Please contact me once you may wish to select an element out of the periodic system for your expertise in writing up such a review type paper. Our Editorial Board team is grateful for your interest and support of this journal and our related vibrant association.

Thank you all – take care!

Best Regards,
Michael Kersten

Association News

2019 IAGC Awards – Call for Nominations

The IAGC is a private, not-for-profit international organization committed to excellence in the geochemical sciences that promotes the application of chemistry across the entire spectrum of earth and environmental sciences.

The IAGC encourages contributions to the field of geochemistry by recognizing individuals for outstanding scientific accomplishments, in the form of grants, certificates, awards, and medals.

We strongly encourage members to nominate peers and colleagues who make significant contributions to the advancement of geochemistry for one or more of the numerous IAGC awards. We are accepting award nominations for 2019 through January 15, 2019. You may nominate colleagues for the following awards, using the Award Nomination Cover Sheet.

Ebelmen Award – bestowed to a geochemist of particular merit and outstanding promise less than 35 years old at the time of nomination.
http://www.iagc-society.org/ebelman.html

The Kharaka Award - bestowed to two deserving scientists (which may include senior graduate students) from developing countries. The award consists of a framed certificate plus an IAGC membership and *Applied Geochemistry* subscription for a term of three years.
http://www.iagc-society.org/kharaka_award.html

The Harmon Distinguished Service Award - bestowed on a deserving candidate to recognize outstanding service by an IAGC

member to the Association or to the geochemical community that greatly exceeds the normal expectations of voluntary service.
http://www.iagc-society.org/distinguished_service.html

IAGC Fellow - bestowed to a scientist who has made significant contributions to the field of geochemistry.
http://www.iagc-society.org/iagc_fellows.html

Certificate of Recognition - awarded to IAGC Members for outstanding scientific accomplishment in a particular area of geochemistry, for excellence in teaching or public service, or for meritorious service to the Association or the international geochemistry community.
http://www.iagc-society.org/certificate_recognition.html

Charitable Giving

Members can make a charitable gift to IAGC, either for general fund support or for special initiatives during online membership renewal. You may donate at any time online, either during your membership renewal or separately.

US members who need an additional tax deduction for 2018 should make their contribution prior to 31 December.

Please donate right now through the IAGC web site (www.iagc-society.org/donate.html)

IAGC is a 501(c)3 non-profit organization and donations to the Society are tax-deductible in the U.S. (EIN: 48-0943367).

Renew Your Membership for 2019!

Don't forget to renew your IAGC membership for 2019 by January so you don't miss any issues of *Elements* magazine! Believe it or not, our annual membership fee is STILL only $25 and includes a hard copy subscription to *Elements* as well as online access. Membership also rewards you with lower cost registration rates at IAGC-sponsored working group conferences. Online access to our journal, *Applied Geochemistry*, is also available.

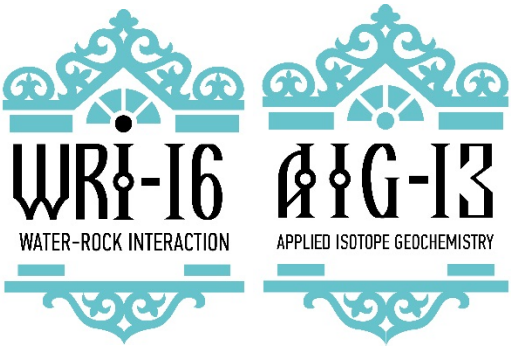
Renew with a credit card

Renew with a check

Check your membership status

2019 Meetings

1st IAGC International Conference



Tomsk, Russia, 21-26 July, 2019
http://wri16.com/

December 15, 2018
Manuscript Submission Deadline

February 15, 2019
Early Registration Deadline

Next year, like every three years, the Water-Rock Interaction (WRI) Working Group of the International Association of Geochemistry will meet for a week of science and collegiality in a unique region of the world. This meeting will be unique, as the Water-Rock Interaction and Applied Isotope Geochemistry (AIG) Working groups will organize a joint Symposium for the first time, consolidating as the 1st IAGC International Conference in the heart of Siberia, in Tomsk, Russia, 21-26 July, 2019. To this end, we hope to attract researchers and scholars from the fields of geochemistry, hydrology, geology and environmental sciences as well as colleagues from applied isotope geochemistry to share their scientific findings and exchange ideas at the 1st IAGC International Conference. The consolidated conference is planned to be a week-long meeting, with the technical program operating at two levels – sets of technical sessions organized by both Working Groups around themes of their choice, and multiple inter-disciplinary symposia developed by the conference organizers. The local committee led by Secretary General Natalia Guseva of the Tomsk Polytechnic University is developing an interesting scientific program including pre- and post-conference excursions and opportunities to experience the culture of Siberia and Russia.

Participants are asked to sign up on the WRI-16 website at wri16.com. The manuscript submission is now open and instructions regarding format and content can be found under wri16.com/submission/paper-instruction. Authors are invited to submit not more than 2 manuscripts written in English by December 15, 2018. The early registration deadline for the conference is February 15, 2019, followed by a late registration deadline on March 30, 2019.

Goldschmidt 2019

Barcelona, Spain
18-23 August, 2019

Abstract submission for the 2019 Goldschmidt Conference will open on January 15, 2019

https://goldschmidt.info/2019/index

Don't forget – the IAGC members are eligible for member registration rates at Goldschmidt 2019 through our Memorandum of Understanding with the European Association of Geochemistry (EAG)

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Online access to our journal, *Applied Geochemistry*, is available 2019 at $70 for student members and $92 for professional members. You must pay your IAGC dues in order to purchase *Applied Geochemistry*.

To renew online using a credit card through PayPal or Square Market, via check, or to simply check your membership status, follow the links below and enter either your membership number or email address:

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