

# Newsletter

## of the International Association of GeoChemistry

Number 73, December 2020

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### From the President

As we are approaching the end of the year, so am I approaching the end of my term as President of the IAGC. I am confident that I'm leaving the leadership in good hands, and I welcome Jodie Miller as new President. I want to thank everyone, office members, committee members, and especially Business Office Manager Chris Gardner for making sure we have kept the organization activities on time.



Among the activities performed during the last two years, the most rewarding tasks were to participate in the IAGC Student Research Grants and the IAGC awards committees. I would like to thank the full IAGC Council and members of the awards and grants committees. As you may imagine, the pandemic beginning in March 2020 interrupted a lot of things; we realized in April that we were delayed in the organization of both committees, but after sending an e-mail, within 24 h we had enough volunteers among the officers and council members to form the two committees. Thank you all for your amazing response in such a difficult time.

With regard to the IAGC Awards, it was a pleasure during my term as President to be able to give the awards in person in the IAGC joint meeting (WRI-AIG) in Tomsk to François Chabaux, Kirk Nodstrom and Chen Jiubin, and at the 2019 Goldschmidt conference in Barcelona to Jacques Schott, Julien Bouchez, Jochen Hoefs. I would like to congratulate the awardees of the 2020 IAGC Awards, Bernhard Mayer, Russell Harmon as IAGC Fellows, Zimeng Wang was the recipient of the Ebelmen Award and Abhijit Mukherjee received the Kharaka Award. Finally, since the call for the 2021 awards is now open I would like to encourage all of you, to participate in the nominations, and as stated in my previous letter please consider geographic and especially gender perspective in your nominations (during the last 4 years we did not received a single nomination for a female scientist). I would also like to highlight that we have added a new award, the Jin Jingfu Memorial Lecture, addressed to early-career scientists, and that will have its first call during 2021.

During 2020 we added new Council Members, nominated by a committee chaired by Philippe Négrel, and several changes occurred among the working group leaderships. I would like to thank the past members (Patrice de Caritat, Stephen Grasby, Sophie Opfergelt, Avner Vengosh, Thomas Kretzschmar - WRI and Rich Wanty - AIG) and those who still continue leading the working groups (Steven Banwart – GES and Martin Novack- BioGeo) for their dedication during the last four years, and welcome the new members (Dirk Kriste, Sergey Alexeev, Elisa Sacchi, Huaming Guo, François Chabaux, Liz Widom, PierPaolo Zuddas -WRI and Romain Millot -AIG).

I'm really glad that during my term I was able to meet some of you personally in the first IAGC International Conference in Tomsk, co-organized by the Water Rock Interaction and Applied Isotope Geochemistry working groups. Consolidating the IAGC International Conference

will be an important challenge for the Association in the future years. Of course, the pandemic has changed the planned conferences and the upcoming GES meeting was postponed to 2021 and the IAGC joint conference (WRI and AIG) to 2022. I really hope we can meet again in some of these upcoming events.

Thanks a lot to our Editor in Chief, Michael Kersten (now Co-Editor in Chief) for his invaluable task leading the *Applied Geochemistry* journal. I would also like to welcome the new Co-Editor in Chief, Zimeng Wang. Although recently appointed, he has already proposed two very interesting initiatives. He has promoted the initiative of an "Excellence in Review Award" and the "Emerging Investigator Series," both initiatives will contribute to expand journal and the IAGC influence, thanks for leading them Zimeng.

Finally I'm not a good example in managing social networks but I invite you to follow the IAGC on Twitter, [@IAGeoChemistry](https://twitter.com/IAGeoChemistry), I've just joined yesterday and find quite interesting news, such following up of the students who received the support of the IAGC Student Grants, thanks again Chris for setting up the profile.

Please do not hesitate to contact me of any other council member if you have comments, suggestions, and/or new ideas to implement and we will bring those to the IAGC board.

Neus Otero (notero@ub.edu)

## Open Call: Emerging Investigator Series

We are delighted to announce the Emerging Investigators Series in our Society's journal, *Applied Geochemistry*. The aim of the Series is to highlight excellent work by independent researchers in their early career that bring new insights into the field of geochemistry or to promote geochemical applications.

Multidisciplinary work related to applied geochemistry, biogeochemical processes, and environmental geochemistry are also highly welcomed. Featured articles as well as the authors as emerging investigators will be extensively advertised to diverse disciplines and communities through multiple platforms of the journal and the International Association of GeoChemistry. The selected Emerging Investigators will also be considered as candidates for the early career honors bestowed by IAGC and the editorial engagements with *Applied Geochemistry*.

### Application

Applicants should have completed their PhD (or equivalent degree) within the last 10 years, and have an independent career. Apply to the Emerging Investigators Series by contacting Editors-in-Chief, [Michael Kersten](#) and [Zimeng Wang](#) with the following information:

- Your up-to-date CV with full name, affiliation, contact information. The CV should be no longer than 3 pages and include the education and career, a (selected) list of publications, professional achievement, honors and awards, and a website of applicant's group if available.
- A synopsis of the article intended to be submitted to the Series, including a tentative submission date. Please see <https://www.journals.elsevier.com/applied-geochemistry/> for more information on the manuscript types and other instructions for authors. Regular research article, rapid communication, feature article, and critical review are all acceptable to the Series.

### Reviewing Criteria

Applications will be reviewed by the editors and the advisory board of the journal. The relevant

criteria for reviewing will be based on the following:

- originality and novelty of the research
- scientific quality of the research
- potential for significant impact
- balancing factors related to inclusion and diversity

The selected applicants will receive formal invitation from the journal to submit their featured articles. Please note that submitted articles for the series will still undergo the same rigorous peer-review process as regularly submitted papers.

### Schedule

This is an ongoing series with featured articles being added into the collection of Emerging Investigator Series continuously and displayed on the media of the journal and IAGC.

## IAGC on Twitter

Better late than never! Follow the IAGC on Twitter [@IAGeoChemistry](https://twitter.com/IAGeoChemistry). This account will be the latest source of IAGC information and is also embedded on the front page of our website. It's a new account and we need followers, so follow us if you're on Twitter!



## Association News

### 2021 IAGC Awards – Call for Nominations

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 2021 **through January 15,**

**2021.** 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 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](http://www.iagc-society.org/distinguished_service.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](http://www.iagc-society.org/kharaka_award.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](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](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. New for this year, we are asking for donations to support the **new Jin Jingfu Lecture** and an additional **PhD student from a low or middle income country**.

US members who need an additional tax deduction for 2020 should make their contribution prior to 31 December.

Please donate right now through the IAGC web site ([www.iagc-society.org/donate.html](http://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 2021!

Don't forget to renew your IAGC membership for 2021 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](#)

## Elsevier IAGC Student Research Grant Update

Thank you for spreading the word about our 2021 Student Research Grants – this year we received 51 proposals from PhD students around the world. We plan to fully support five proposals this year, plus an additional one from a low or middle income country. The announcement of the winners will be on or before 1-May, 2021.

[http://www.iagc-society.org/phd\\_grants.html](http://www.iagc-society.org/phd_grants.html)

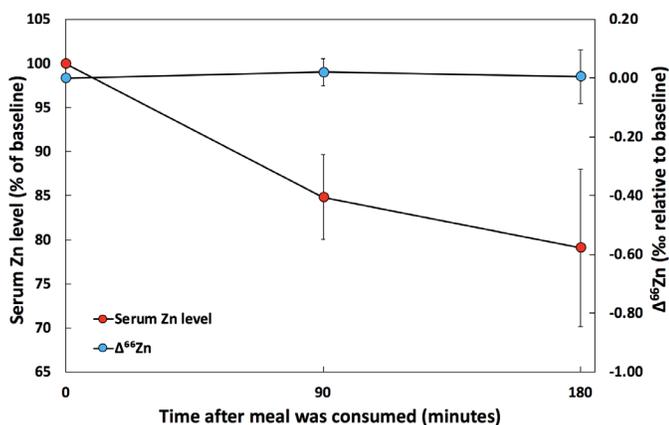
## Catching up with previous Elsevier PhD Student Research Grant Winners

The most exciting part of supporting PhD students' geochemical work is getting to learn about the results of their project and seeing where their early career takes them next. In this issue, **Kaj Sullivan** and **Marsha Allen** describe how IAGC funds helped them realize their research project and share the results of their work.

### **Kaj Sullivan (University of Alberta, Canada)**

**Kaj** received an IAGC PhD Student Research Grant in 2018 for his proposal entitled “Copper and zinc isotopes in serum as biological markers of Alzheimer’s disease.” Kaj received his BSc in Geological Sciences in 2015 and PhD in 2020, both from Queen’s University (Canada), and is currently a postdoctoral fellow at the University of Alberta’s Department of Renewable Resources. Zinc concentrations in blood serum decrease by ~20% approximately 3 hours after eating, putatively due to postprandial sequestration by the liver and pancreas to participate in phosphorylation reactions and the synthesis of digestive enzymes, respectively. As part of his

PhD research, Kaj was able to establish that, interestingly, this relatively large post-meal zinc concentration decrease is accompanied by negligible fractionation of zinc stable isotopes ( $\Delta^{66}\text{Zn} = 0.01 \pm 0.09\text{‰}$  2SD). These results indicate that studies examining solely the distribution of zinc isotopes in blood serum may obtain samples without considering timing of the most recent meal. However, future studies seeking to compare serum zinc concentrations with  $\delta^{66}\text{Zn}$  values should draw blood samples in the morning after overnight fasting. This finding is important to the emerging field of medical isotope metallomics, due to the increased interest in using metal stable isotopes as diagnostic and prognostic markers of diseases, such as Alzheimer's and cancer. To facilitate the further investigation of the disruption of metal homeostasis in disease, study design must account for all normal physiological processes affecting metal concentrations and isotopic compositions in order to reveal disease-related changes.



Support from the International Association of GeoChemistry PhD Student Research Grant enabled collaboration with researchers at Imperial College London to perform zinc isotopic analysis using the zinc double-spike instrumental mass bias correction technique.

Sullivan, Kaj, et al. "Postprandial zinc stable isotope response in human blood serum." *Metallomics* 12.9 (2020): 1380-1388. <https://doi.org/10.1039/D0MT00122H>

## Marsha Allen (University of Massachusetts Amherst, USA)

In 2019, I received an IAGC Grant which covered some of my environmental tracer analysis of ten production wells on the island of Tobago. This segment of my dissertation research was an extension from a report published by



Boutt et al., 2020, on which I am a coauthor. One of the main findings illustrated that the southern region of the island's sub-basins was overproducing between 100 to 1000% their estimated groundwater recharge. We hypothesized that these wells were either tapping into a deep old source of groundwater, or that fractures were facilitating inter-basin flow causing water to cross topographical boundaries.

The tritium results have confirmed that all groundwaters samples contain over 50% pre-modern water and that production wells to the south contain the oldest water on the island, with one production well sample containing the apparent age of over 60 years old. These results confound traditional understanding of short residence times and flow paths in the perceived low permeability of crystalline fractured rock island aquifer systems.

These results were recently presented at The Geological Society of America Annual Conference, October 2020. An abstract on these results was also accepted for the Caribbean Science Symposium on Water which takes place virtually March 22<sup>nd</sup> -26<sup>th</sup>, 2021 with a paper for publication.

## Inaugural AG Excellence in Review Awards

Since the founding of [Applied Geochemistry](#) in 1986, many outstanding reviewers have helped shape our Society's journal and our success as a Society. We are indebted to those contributions, and beginning in November 2020, we are highlighting the reviewers who deserve extra recognition. The editorial board of *Applied Geochemistry* launched our annual "[Excellence in Review Award](#)" to recognize the dedicated community of expert reviewers inside and out of our organization. Each awardee received a digital certificate, and a complimentary 2-year membership in the IAGC. We offer a big THANK YOU to all of our awardees and congratulations!

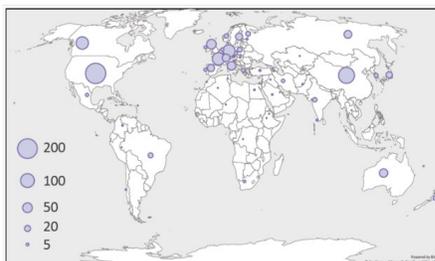
- **Achim Albrecht** - Andra Research and Development, France
- **Juan Antelo** - University of Santiago de Compostela, Spain
- **Antonella Buccianti** - University of Florence, Italy
- **Ian Burke** - University of Leeds, UK
- **Jordi Cama** - Institute of Environmental Assessment and Water Research IDAEA, Barcelona, Spain
- **Jinli Cui** - Guangzhou University, China
- **Walter D'Alessandro** - National Institute of Geophysics and Volcanology, Italy
- **W. George Darling** - British Geological Survey, UK
- **Elisabeth Eiche** - Karlsruhe Institute of Technology, Germany
- **Qinghai Guo** - China University of Geosciences (Wuhan), China
- **Jennifer Harkness** - US Geological Survey, USA
- **Helge Hellevang** - University of Oslo, Norway
- **Guanxing Huang** - Institute of Hydrogeology and Environmental Geology, Chinese Academy of Geological Sciences, China
- **Wolfram Kloppmann** - Bureau des Recherches Géologiques et Minières, Orléans, France
- **Peng Liao** - Institute of Geochemistry, Chinese Academy of Sciences, China
- **Bernhard Mayer** - University of Calgary, Canada
- **Zezen Pan** - École polytechnique fédérale de Lausanne, Switzerland
- **Daniele Pinti** - Université du Québec à Montréal, Canada
- **Pauline Smedley** - British Geological Survey, UK
- **Ondra Sracek** - Palacky University, Czech Republic
- **Yukio Tachi** - Japan Atomic Energy Agency, Japan
- **Marion Tichomirowa** - Technical University Bergakademie Freiberg, Germany
- **Joanne Vanderzalm** - CSIRO Land and Water, Glen Osmond, Australia
- **Avner Vengosh** - Duke University, USA
- **David Vinson** - University of North Carolina-Charlotte, USA
- **Sue Welch** - Ohio State University, USA
- **Paul Wersin** - University of Bern, Switzerland
- **Erich Wieland** - Paul Scherrer Institute, Switzerland

## **Letter from Editors-in-Chief of Applied Geochemistry**

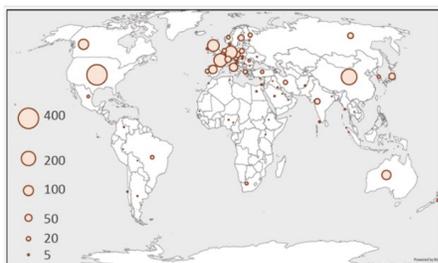
Dear friends and colleagues in the IAGC community,

Over the last 6 months, we tested the water with two co-Editor-in-Chiefs at the helm of our journal. So far so good! We get along very well and are working together hand-in-hand. With a new chief editor aboard who injected new dynamics and ideas, we also re-analyzed the niche and strategies of our journal. Our mission is to lead our journal to be the flagship of applied geochemistry that includes both the environmental/health and exploration/economic aspects of the discipline. In this letter, we want to reemphasize the importance of community among our authors, reviewers, editors and readers all around the world, which is the most valuable asset of a society journal:

Authors 2015-2020



Reviewers 2015-2020



In 2020, we launched several major initiatives to promote the journal's impact and increase engagement with our community. First, we presented the inaugural Excellence-in-Review Awards to a wonderful group of 28 dedicated reviewers all over the world (<http://www.iagc->

[society.org/Excellence\\_in\\_Review.html](http://www.iagc-society.org/Excellence_in_Review.html)), which we also list in this issue of the Newsletter. We encourage our associate editors to develop personal-level interactions with peer reviewers and keep nominating outstanding colleagues to join in the honor roll that will grow each year. Secondly, we launched the “Emerging Investigator Series” as an international and competitive venue to feature early career geochemists’ independent research. Those rising-star researchers will become a new dynamic force for the IAGC, and we request everyone spread the announcement to various communities and encourage young geochemists to apply ([http://www.iagc-society.org/Emerging\\_Investigator\\_Series.html](http://www.iagc-society.org/Emerging_Investigator_Series.html)). Lastly, we are about to launch a special column named “AG Classics” to feature impactful and landmark papers published in *AG* in the last 35 years. This program will aim to engage over one hundred people including the authors, commentators and volunteering coordinators. We appreciate your input and contributions to this special initiative!

Finally, better late than never – we’re embracing social media to help promote the journal and IAGC, an increasingly important aspect of today’s competitive scientific publishing and scholarly communities. Find us on Twitter ([@IAGeoChemistry](https://twitter.com/IAGeoChemistry) and [@zimengwang](https://twitter.com/zimengwang)), and Wechat.

The year of 2020 will definitely be unforgettable – let’s hope that our greetings and handshakes will shoot out the Zoom meeting windows as soon as international travel unlocks. Thank you all – take care!

Best Regards,  
Michael Kersten  
Zimeng Wang

## Upcoming Meetings

As is the case with all international meetings this year, our conferences were in a state of flux. Keep an eye on the websites below and IAGC emails for updated information about GES-12 and the 2<sup>nd</sup> IAGC International Conference.

### GES-12

As we've previously announced, the 12<sup>th</sup> **International Symposium on the Geochemistry of the Earth's Surface (GES-12)** was postponed due to the COVID-19 crisis and **rescheduled for 25-30 July 2021:**



Earth system  
interactions on a  
changing planet

**ETH** zürich

ETH Zurich (Switzerland), 25-30 July 2021

[www.ges12.com](http://www.ges12.com)

GES-12 brings together world-leading scientists in all fields of surface geochemistry and environmental geochemistry. The conference has a strong focus on interactions between the Earth's spheres: the lithosphere, hydrosphere, atmosphere and biosphere, and how these interactions respond to changing environmental and climate conditions. The overarching theme of GES-12 is **Earth system interactions on a changing planet.**

The conference aims to strengthen connections between research disciplines and to establish new networks. It features invited plenary talks

covering a wide range of cutting-edge research themes. GES12 presents eight themes at the forefront of research and features a list of excellent speakers from prestigious research institutions such as Caltech, MIT, NASA and Harvard. The extensive poster and networking sessions give ample opportunities to discuss newest research highlights and innovations and to visit the exhibitions.

### 2<sup>nd</sup> IAGC International Conference (WRI-17 and AIG-14)

Sendai, Japan  
2-8 August 2022

The 2<sup>nd</sup> IAGC International Conference will be held in Japan, hosted by Secretary General Noriyoshi Tsuchiya (Tohoku University). Like the previous meeting in Tomsk, it will combine two of our most popular working groups, Water-Rock Interaction and Applied Isotope Geochemistry.

Watch our website for further details  
[www.IAGC-Society.org](http://www.IAGC-Society.org)

### ISEG 2022 (International Symposium on Environmental Geochemistry)

23-26 August 2022  
Moscow, Russia

Keep an eye on our [website](#) and [Twitter](#) for more information on ISEG 2022 in the coming months.

## IAGC Executive Officers

### **PRESIDENT** (2019-2020)

Neus Otero  
University of Barcelona  
SPAIN

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Jodie Miller  
Stellenbosch University  
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French Geological Survey (BRGM)  
FRANCE

### **TREASURER** (2008-2020)

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School of Earth Sciences  
The Ohio State University  
USA

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Sciences University of Waterloo  
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Mainz  
GERMANY

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The Ohio State University  
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Email: [BusinessOffice@IAGC-Society.org](mailto:BusinessOffice@IAGC-Society.org)

## Council Members

Sergey V. Alexeev  
Institute of the Earth's Crust SB RAS  
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University of Strasbourg  
FRANCE

Huaming Guo  
China University of Geosciences  
CHINA

Dirk Kirste  
Simon Fraser University  
CANADA

Elisa Sacchi  
University of Pavia  
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Elisabeth Widom  
Miami University  
USA

Pierpaolo Zuddas  
(Water-Rock Interaction)  
Sorbonne University  
FRANCE

Romain Millot  
(Applied Isotope Geochemistry)  
French Geological Survey (BRGM)  
FRANCE

Steven Banwart  
(Geochemistry of the Earth's Surface  
Chair)  
The University of Sheffield  
UNITED KINGDOM

Martin Novak  
(Biogeochemistry Chair)  
Czech Geological Survey  
CZECH REPUBLIC

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(Global Geochemical Baselines)  
U.S. Geological Survey  
USA

David Long  
(Urban Geochemistry)  
Michigan State University  
USA

Ron Fuge  
(Environmental Geochemistry Chair)  
Aberystwyth University  
UNITED KINGDOM

Olle Selinus  
(Environmental Geochemistry Chair)  
Linneaus University  
SWEDEN

## **Renew Your IAGC Membership for 2021!**

Don't forget to renew your IAGC membership for 2021 before January so you don't miss any issues of *Elements* magazine! 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 available 2021. Our 2019 rates are still available for a few weeks at \$70 for student members and \$92 for professional members. We expect this price to rise after Elsevier updates their costs for 2021. 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:

[Renew with a credit card](#)

[Renew with a check](#)

[Check your membership status or look up your membership number](#)