



# International Association of GeoChemistry

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## IAGC AWARDS

We are pleased to announce the International Association of GeoChemistry (IAGC) Awards for 2018. Congratulations to all the recipients. Thank you for your service to the IAGC and the geochemical community!

### Vernadsky Medal



**Jacques Schott** is Directeur de Recherche CNRS Emeritus at the Observatoire Midi-Pyrénées in Toulouse (France). Jacques received his Docteur ès Sciences Physiques degree from Toulouse University (1974) and defended his thesis, as a Fellow of the French Commissariat à l'Énergie Atomique (CEA), on chemical and isotopic fractionation in natural systems, which are a result of coupling between diffusion, thermal gradients, and natural convection (Soret and thermogravimetric diffusion). After an assistant professorship at Toulouse University and a research associate position at Yale University (USA) (1979–1982), he has worked at the Centre National de la Recherche Scientifique (CNRS) on experimental and theoretical modeling of solid–fluid interactions in natural systems. Jacques helped create a new experimental laboratory aimed at generating kinetic, thermodynamic, and structural parameters for minerals, aqueous species (especially metals), and mineral–solution interfaces. This information can be used for modeling, at different spatial and temporal scales, reactive transfers within the Earth's crust and at its surface. Jacques' recent fields of interest are: i) the quantification of the kinetics of crystal growth for carbonate and silicate minerals and ii) the characterization of the kinetics and equilibrium fractionation of novel isotope proxies during solid–solution interactions as a function of the aqueous and solid speciation of metals and their reaction affinity. Jacques has served on several national and international committees involved with research and teaching.

### Ebelmen Award



**Julien Bouchez** has been a CNRS Junior Researcher at the Institut de Physique du Globe de Paris (France) since 2013. He graduated from Université Paris Diderot (2009) and was a post-doctoral researcher at the German Centre for Geosciences, Potsdam (Germany) (2010–2013). His core research activity is focused towards better understanding the roles played by erosion, weathering, and river transport in global biogeochemical cycles. He is involved in the development of novel geochemical tracers for weathering rates and associated processes. He uses a combination of analytical work and modeling to unravel how, where, when, and at what rate do chemical elements move between Earth's different surficial environments. He researches the coupling between solute and sediment chemistry with water and sediment dynamics in the largest rivers of the world and is involved with the French network of Critical Zone Observatories (OZCAR) and its counterparts in other countries.

### IAGC Fellows



**Jochen Hoefs** is an emeritus professor of geochemistry at the Georg-August University of Göttingen (Germany). Jochen is an internationally recognized stable-isotope geochemist whose career has been characterized by a distinguished record of research publications and longstanding service to the geochemistry community (>30 years) as co-editor of *Contributions to Mineralogy & Petrology*. Jochen was an

IAGC member throughout his professional career and served on the IAGC Council for 8 years from 1996 to 2004, chairing multiple executive committees during that time. Jochen is best known within the stable isotope community for the multiple editions of his book *Stable Isotope Geochemistry*, which has received >3,000 literature citations and has been used as a course textbook around the world. He has also authored almost 200 peer-reviewed research papers, which have addressed all traditional light stable isotope systems (H, Li, C, N, O, S) and that have received >8,000 literature citations.



**D. Kirk Nordstrom** has more than 40 years of professional experience with the US Geological Survey. Kirk is recognized internationally for his research on acid mine drainage, radioactive waste disposal, geothermal chemistry, geomicrobiology, arsenic geochemistry, thermodynamics, and geochemical modeling. He holds a BS in chemistry from Southern Illinois University (USA), an MS degree in geology from the University of Colorado (USA), and a PhD in applied Earth sciences from Stanford University (California, USA). He has received both the Birdsall–Dreiss Distinguished Lectureship Award from the Hydrogeology Division of the Geological Society of America and the Meritorious Service and Cooperative Conservation Awards from the US Department of the Interior. Kirk is a long-standing IAGC member with a distinguished research career that has produced more than 250 research publications with >12,000 literature citations.

### Kharaka Awards



**Jiubin Chen** is at Tianjin University (China) at the Institute of Surface-Earth System Science (ISESS). He completed an undergraduate degree in Earth science in the Changchun Institute of Geology (China). He earned both his DEA and PhD degrees at the Institut de Physique du Globe de Paris, University Paris 7 (France), where he studied the geochemistry of metal isotopes (Zn, Cu, Fe), and this was followed by a post-doc at Trent University (Canada) on Hg isotopes. He then worked in the Institute of Geochemistry, Chinese Academy of Sciences (IGCAS) in Guiyang. Currently, he studies the geochemistry of metal isotopes, focusing on methodology development, fractionation mechanisms, and potential applications to different surface environments. He has developed methods for purifying Zn, Hg, and Ga from geological matrices for precise isotope analysis for tracing pollution and for understanding biogeochemical cycling.



**Teng Yanguo** is currently a professor at Beijing Normal University (China). He received his PhD in environmental geochemistry at Chengdu University of Technology (China) in 2001. Since then, he has been working on environmental geochemistry and hydrogeochemistry at Beijing Normal University. As contamination of soils and water poses a serious threat to human health, the environment, and economy in China, Teng's expertise and skills in applied geochemistry find ample opportunities in challenging science problems and in making societal relevant contributions. He applies the principles and methods of geochemistry to problems in soil and water contamination and to water resources. His major contributions include the systematic assessment of Cu and V contamination in soils from two world-class mines, studies of radionuclide sorption onto soil particles, and the nature of biogeochemical reactions caused by river-bank filtration projects.

### Hitchon Award

The IAGC Hitchon Award is given annually to the lead author of the paper in the IAGC journal, *Applied Geochemistry*, that has the most citations from 5 years ago, according to SCOPUS. The winner for 2018 (based on the year 2013) is:

Haluszczak LO, Rose AW, Kump LR (2013) Geochemical evaluation of flowback brine from Marcellus gas wells in Pennsylvania, USA. *Applied Geochemistry* 28: 55-61



**Lara Haluszczak** received her BS degree in 2011 from the Pennsylvania State University (USA) in geoscience, specializing in hydrogeology. Ms. Haluszczak and her colleagues published her undergraduate thesis "Geochemical Evaluation of Flowback Brine from Marcellus Gas Wells in Pennsylvania, USA" in *Applied Geochemistry* in January 2013, which has since been cited 218 times. Congratulations to Ms. Haluszczak!

### ELSEVIER / IAGC PHD STUDENT RESEARCH GRANTS

The IAGC is happy to announce the recipients of the 2017 Student Research Grants sponsored by Elsevier and the IAGC. This has become a very competitive award, with a funding rate of only 5% for 2018. The success of these grantees demonstrates the extremely high caliber of their research. Congratulations to our grantees!



**Deon Knights** is from Trinidad and Tobago and is currently a PhD candidate at The Ohio State University (USA). He earned a BS in geology at the University of Delaware (USA) and a MS in Earth sciences at The Ohio State University. Deon is investigating the efficacy of coastal freshwater wetlands in removing nutrients transported to the coast using open-atmosphere benthic chambers to associate total nitrate removal (net denitrification, nitrification, DNRA) to unique ecogeomorphic zones along the Wax Lake Delta (Louisiana, USA). Nitrate removal rates will be used in a two-dimensional finite difference model of the Wax Lake Delta.



**Christina Richardson** is currently a PhD student in Earth sciences at the University of California at Santa Cruz (USA). She received her BS in marine biology from the University of California at Santa Cruz in 2012 and her MS in geology and geophysics from the University of Hawai'i at Manoa (USA) in 2016. Currently, she studies dissolved nutrient and trace element fluxes from agricultural drainage into the Sacramento-San Joaquin River Delta in California, the largest estuary in the US west of the Mississippi River, using a suite of geochemical and stable isotope tracers to better understand the biogeochemical processes than control agricultural drainage geochemistry.



**Joyce Yager** is currently a PhD student at the University of Southern California (USA) in the Department of Earth Sciences. She earned her BS in marine science, biology, and geology at the University of Miami (Florida, USA) in 2013. She is investigating the Triassic-Jurassic transition, including the lead up to and the aftermath of the end-Triassic extinction. Her primary goal is to better understand the link between large igneous province volcanism and the end-Triassic extinction. She uses proxies for volcanism in the marine sedimentary record together with proxies for changes in biogeochemical cycling and redox from marine sedimentary sections to investigate the interplay between volcanism and the probable causes of the extinction.



**Erin Scott** graduated with a BSc in geology from Durham University (UK) in 2015 and continued at Durham for her PhD project studying Andean tectonics and arc volcanism. A major theme of her research is looking for continental-scale geochemical changes along the Andean arc associated with Cenozoic crustal thickening events during the formation of the Andean Plateau. In particular, Sr- and Nd-radiogenic isotopes of Andean arc lavas correlate well with elevation and crustal thickness and can be used to discriminate between 'plateau' and 'non-plateau' settings and help further constrain the nature and timing of crustal thickening and surface uplift events during a critical stage of Andean Plateau evolution.



**Masoomeh Kousehlar** obtained her bachelor's degree in geology and her master's degree in petrology from the University of Tehran (Iran). She is currently a PhD student in the Department of Geology and Environmental Earth Science at Miami University (Ohio, USA). Masoomeh uses a combination of geochemical and microscopy techniques to investigate air pollution in urban and industrial areas. Masoomeh is using tree bark and lichen as biomonitors, analyzing these samples for their elemental compositions and for Sr, Nd, Pb isotopic ratios to identify and characterize the sources of air pollution in areas with limited environmental studies.



**Kaj Sullivan** earned his BSc in geological sciences from Queen's University (Canada) where he is currently conducting his PhD research. He is investigating the potential if copper and zinc isotopes in the serum can be used as biological markers of Alzheimer's disease (AD). Kaj's research aims to detect AD by measuring slight changes in copper and zinc isotopic compositions in serum as a result of amyloid plaque formation in the brain, which can often precede the emergence of clinical symptoms by decades. There are currently no validated biomarkers for AD. Should Cu and Zn isotopes in serum prove to be effective biomarkers, the disease could be detected before the onset of clinical symptoms.