



# International Association of GeoChemistry

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## IAGC AWARDS

We are pleased to announce the International Association of GeoChemistry (IAGC) Awards for 2020. Congratulations to all the recipients, and thank you for your service to the IAGC and the geochemical community!

### IAGC Fellows



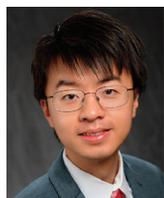
**Russell Harmon** retired as Director of the International Research Office of the US Army Corps of Engineers' Engineer Research and Development Center in 2017; he is presently an adjunct associate professor in the Department of Marine, Earth, and Atmospheric Sciences at North Carolina State University (USA). A geochemist who has worked at NASA's Manned Spacecraft Center, the Scottish Universities Research and Reactor Centre (UK), and the NERC Isotope Geosciences Laboratories (UK), he has held faculty positions at Michigan State University (USA) and the Southern Methodist University (Texas, USA). He is a Fellow of the Geological Society of America and National Speleological Society, past Chair of the Geological Society of America Division of Mineralogy, Geochemistry, Petrology, and Volcanology and a Past-President of the International Association of GeoChemistry. He holds a BA from the University of Texas, an MS from Pennsylvania State University (USA), and a PhD from McMaster University (Canada).



**Bernhard Mayer** received his PhD in geochemistry from the Ludwig Maximilian University of Munich (Germany). After an 18-month postdoctorate at the University of Calgary (Canada), he returned to Germany as an assistant to Dr. Jan Veizer at the Ruhr University, Bochum. In 1997, Dr. Mayer accepted a professorial appointment at the University of Calgary. His applied geochemistry research group in the

Department of Geoscience at the University of Calgary combines aqueous, gas, and isotope geochemical approaches to determine the sources, the transport, and the fate of nutrients and contaminants in surface and subsurface systems. His work spans a wide variety of geochemical topics, including the quality of groundwater and surface waters, and the environmental impact of fossil fuel development, including shale gas exploitation, geologic CO<sub>2</sub> sequestration, and oilsand recovery. Since 2016, Dr. Mayer has served as the head of the Department of Geoscience in the Faculty of Science at the University of Calgary and was recently awarded a Killam Professorship.

### Ebelmen Award



**Zimeng Wang** is a professor in the Department of Environmental Science and Engineering at Fudan University (China). He received his BS from Fudan University in 2009 and his PhD from Washington University in St. Louis (Missouri, USA) in 2013; this was followed by postdoctoral research at Stanford University (California, USA). He was a faculty member at Louisiana State University (USA), before

returning to the faculty of his alma mater. At Fudan, he teaches soil chemistry courses and directs an environmental geochemistry program. With an expertise in mineral-water interfaces, he researches the aqueous speciation of heavy metals and radionuclides, pollution characterization, and remediation at field sites. He received an Excellence in Review Award by *Environmental Science and Technology*, the Li Foundation Heritage Prize for Excellence in Creativity, and he is an active member in the Association of Chinese-American Professors of Environmental Engineering and Science, serving as its China Liaison Officer, and is

on various technical committees of the Soil Science Society of China. He is currently an associate editor of the IAGC's official journal, *Applied Geochemistry*.

### Kharaka Award



**Abhijit Mukherjee** obtained his PhD from the University of Kentucky (USA) and completed postdoctoral work at the University of Texas at Austin (USA). He has served as the physical hydrogeologist at the Alberta Geological Survey in Canada and is currently an associate professor at the Department of Geology and Geophysics in the School of Environmental Science and Engineering at the Indian Institute of

Technology Kharagpur (India). His main research areas are physical, chemical, and isotope hydrogeology and geochemistry, including modeling and contaminant transport, water resource management, and the effects of climate change on the hydrosphere. He has served as an associate editor for *Applied Geochemistry* and the *Journal of Hydrology*, and he is presently serving an editorial role in *Scientific Reports* and the *Journal of Earth System Sciences*. He has been an advisor to various Government of India ministries and departments and has received many awards, including the National Geoscience Award by the President of India.

### Hitchon Award

The IAGC's Hitchon Award is given annually to the lead author of a paper in the IAGC journal *Applied Geochemistry* that, according to SCOPUS, has had the most citations since its publication 5 years ago. The winning paper and its lead author for 2020, based on the year 2015, is ...

Piatak NM, Parsons MB, Seal RR II (2015) Characteristics and environmental aspects of slag: a review. *Applied Geochemistry* 57: 236-266. **Cited 190 times.**



Nadine Piatak is a research geologist at the U.S. Geological Survey in Reston (Virginia, USA). She holds undergraduate and MSc degrees in geology from Ohio State University (USA). Since joining the USGS in 2001, she researches the geochemical processes that control the source, transport, and fate of trace elements associated with mineral deposits, including environmentally characterizing mine waste and metallurgical slag. Nadine also studies the life cycles of by-product critical elements (e.g., Ga, Ge, and Te) by examining their enrichment in ore deposits and how mineralogical hosts and speciation influence recovery efficiencies during ore processing and refining. Her publications include multiple journal articles and a book chapter on the mineralogy, chemistry, and reuse of slag. Nadine is currently coediting and contributing to a book on slag to be published by the Royal Society of Chemistry.

### Elsevier/IAGC PhD Student Research Grants

The IAGC is happy to announce the recipients of the 2020 Student Research Grants, sponsored by Elsevier and the IAGC. This has become a very competitive award, with a funding rate of 12% for 2020. The success of these grantees demonstrates the extremely high caliber of their research. Congratulations to all our grantees!



**Alexandre Ribeiro Cardoso** graduated with a BSc in geology (2016) and a MSc in geology and geochemistry (2019) from the Federal University of Pará (Brazil). He is currently conducting his PhD research in the Department of Geology and Natural Resources of the State University of Campinas (Brazil). His main goals are to investigate the sedimentology and geochemistry of arid systems, focusing on paleoenvironmental and paleoecological reconstructions of Mesozoic greenhouse states, their relations with mass mortality events, and exceptional preservation of vertebrate fossils. For his PhD dissertation, Alexandre applies facies analysis, petrographic techniques, X-ray diffraction, stable isotopic geochemistry, paleoredox proxies and Raman spectroscopy to build a source-to-sink framework that should help correlate continental records in Brazilian sedimentary basins. This study will refine stratigraphic reconstruction, guide climatic simulations, and help understand biological responses to past conditions akin to current global warming trends.



**Ciara Asamoto** received her BSc in biology from Western Washington University (Washington, USA) in 2015. During her time at Western, she studied phytoplankton community dynamics in response to seasonal hypoxia in Bellingham Bay (Washington State). Ciara is currently a PhD candidate at the University of Colorado at Boulder (USA) and is using a combination of continuous culturing, molecular biology, and stable isotope measurements to study how microbial physiology influences the isotopic biosignature of nitrate reduction. The major aim of this work is to better understand how microorganisms can modulate isotopic signals in response to their environment, so improving our ability to fingerprint particular nitrogen cycling processes in nature. To obtain precise measurements of both nitrogen and oxygen stable isotopes, Ciara uses the denitrifier method, a technique that relies on bacterial conversion of sample nitrate to nitrous oxide gas. The converted nitrate is then analyzed on an isotope ratio mass spectrometer.



**Karaoui Amar** graduated with a BSc in Earth and Universe science from Moulay Ismail University (Morocco) in 2015 and gained his MSc in Geosciences, Mineral Resources and Geomaterials from Sidi Mohamed ben Abdellah University (Morocco) in 2017. He became involved in research related to the late Proterozoic rocks in southern Morocco, where he studied the volcano-sedimentary successions in the Imiter Mine. Amar's current PhD work at Moulay Ismail University is to geochemically characterize the Late Proterozoic plutonic rocks of the Skoura inlier (Central High Atlas, Morocco) and determine their tectonic context. Whole rock and mineral geochemistry will be used to correlate these rocks with neighboring facies. He aims to understand the geodynamic context of the Skoura inlier and its possible connection with the Peri-Gondwana terrane of the northern West African Craton.



**Lauren Kancle** earned her BA in classics from the University of Pittsburgh (Pennsylvania, USA) in 2006 and went on to earn a Doctor of Pharmacy degree (PharmD) from the University of Pittsburgh School of Pharmacy (USA) in 2010. After working as a pharmacist for five years, she decided to attend University College Cork (Ireland) where she completed a Higher Diploma in Archaeology in 2016,

then, in 2018, also an MSc in palaeopathology at the Department of Archaeology at Durham University (UK) where she conducted research into human diets by using stable carbon and nitrogen analysis of incremental dentine collagen and bulk bone collagen. She was subsequently awarded the Durham Doctoral Studentship at Durham University. Her PhD will investigate the degree to which Anglo-Saxon (~5<sup>th</sup> to 7<sup>th</sup> century AD) individuals, normally thought to be sedentary farmers, were mobile; she will use data from several sites in northern England. Her PhD project will create a comprehensive set of isotopic profiles for each individual, including carbon ( $\delta^{13}\text{C}$ ), nitrogen ( $\delta^{15}\text{N}$ ), and sulfur ( $\delta^{34}\text{S}$ ) stable isotope ratios of incremental tooth dentine collagen and bulk bone collagen. These isotopic signatures will provide information on diet resources and farming practices. In addition, tooth enamel strontium ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) and oxygen ( $\delta^{18}\text{O}$ ) isotopes will be analyzed to determine the provenance of each individual.



**Amaury Bouyon** earned his BSc in chemistry at the École Normale Supérieure de Lyon (France) and his MSc in geology at the Institut de Physique du Globe (IPG) de Paris (France). He began his PhD program in 2016 at IPG Paris by using selenium and sulfur multi-isotopic compositions to understand past redox conditions. He is currently a Fulbright Fellow at the University of Maryland (USA). One of the goals

in his PhD is to understand the origin and evolution of carbonatite magmas and to investigate a potential contribution from sediments recycled into the mantle. He uses selective chemical extraction of the different pools of sulfur in carbonatites—such as acid volatile sulfides, pyrite, and barite—before measuring their different isotopic signatures on a gas source mass spectrometer. This will help decipher the complex origin(s) of carbonatites and bring new insight to the generation and evolution of these unusual magmas.



**Christopher T. Conwell** is a fourth-year PhD student in the School of Earth Sciences at Ohio State University (USA), supervised by Dr. Matt Saltzman. Before coming to Ohio State, he received his BS in geology from Temple University (Pennsylvania, USA). For his dissertation, Chris is investigating the links between tectonic uplift, Ca-silicate mineral weathering, and climate during the Middle–Late Ordovician (~470–450 Ma) greenhouse–icehouse transition. Chris uses the record of seawater Sr and Nd isotopes ( $^{87}\text{Sr}/^{86}\text{Sr}$  and  $\epsilon_{\text{Nd}(t)}$ , respectively) preserved in marine carbonate rocks and in bio-apatite to reconstruct patterns of continental weathering. For this work, he has sampled Ordovician carbonate strata in the remote canyons of central Nevada (USA) and the beautiful countryside of Sweden. Chris' nonscientific interests are rock climbing, photography, and his cat (Little Bird).