



International Association of GeoChemistry

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IAGC AWARDS

We are pleased to announce the International Association of GeoChemistry (IAGC) Awards for 2019. Congratulations to the recipients, and thank you for your service to the IAGC and the geochemical community!

IAGC Fellows



David T. Long is in the Department of Earth and Environmental Sciences at Michigan State University (MSU) (USA). He has degrees in geology (BA Monmouth College), hydrogeochemistry (University of Illinois, Chicago, USA), and aqueous geochemistry (PhD University of Kansas, USA). His research and teaching are in the areas of aqueous and environmental geochemistry. He also has MSU appointments in the department of Civil and Environmental Engineering, the

Institute for Global Health, and the Center for Environmental Toxicology. His work concentrates on four themes. First, understanding biogeochemical cycles and the interactions of elements (including trace and heavy metals) and dissolved organic compounds in surface environments (e.g., wetlands, rivers, lakes, groundwater). Second, using stable isotopes, multivariate statistics, and geochemical modelling to understand both the natural and human induced changes in water chemistry as water moves through the water cycle. Third, using exposure analysis to quantify the influences of human activities on environmental systems using sediment chronologies. Fourth, relating knowledge learned from the above studies to evaluate the influences of the environment on human health. International experiences include teaching and research activities in Australia, Bulgaria, Croatia, Israel, Kenya, Malawi, Mexico (Yucatán), Serbia, and Romania. Dr. Long has been co-chairing IAGC sessions on trace metals and organics at the Geological Society of America (GSA) and at Goldschmidt conferences with Gunter Faure, LeeAnn Munk, and Berry Lyons since 2000 (just recently ended) and on urban geochemistry with IAGC Treasurer Berry Lyons since 2013.



William (Bill) H. Orem is currently a Supervisory Research Chemist and Principal Investigator with the U.S. Geological Survey (USGS) in Reston (Virginia, USA) and has some 37 years of research in geochemistry with the Federal Government. Bill earned his PhD in chemistry in 1982 from the University of New Hampshire (USA), having Henri Gaudette and Dennis Chasteen as Advisors. He was awarded his BS degree in chemistry from Lehigh University

(Pennsylvania, USA) in 1974, and his MS degree in oceanography from the University of Delaware (USA) in 1977, having Jon Sharp as Advisor. His research at the USGS focuses on organic geochemistry and biogeochemistry. He currently leads three projects. First, human and environmental health impacts of energy resources. Second, environmental controls on mercury methylation in wetlands. Third, microbial methanogenesis and natural gas production in coal, shale, and petroleum deposits. He has authored over 150 peer reviewed papers and book chapters, and over 200 abstracts for presentations at international meetings. He manages seven labs at the USGS in Reston and supervises permanent lab staff as well as the postdocs and graduate and undergraduate students who come to work with his group. Bill enjoys working with colleagues in many different fields, such as geochemistry, geology, microbiology, hydrology, toxicology, epidemiology, medicine, ecology, marine science, wildlife biology, and more. Bill has served the USGS

and the scientific community on a number of panels that provided scientific feedback, including the USGS Fundamental Science Practices Advisory Panel (present); Review Panels for the Environmental Protection Agency, the National Academy of Sciences, and the National Science Foundation; plus many state and federal review panels on wetlands and contaminants. He has organized numerous symposia at science meetings, is active in a number of scientific organizations including serving as an officer of the Geochemistry Division of the American Chemical Society. He has received a variety of awards, including the Department of Interior Superior Service Award.

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 2019 (based on the year 2014) is:

Guo H, Wen D, Liu Z, Jia Y, Guo Q (2014) A review of high arsenic groundwater in Mainland and Taiwan, China: distribution, characteristics and geochemical processes. *Applied Geochemistry* 41: 196-217

This paper was cited 102 times.



Dr. Huaming Guo is Professor of Hydrogeology in the School of Water Resources and the Environment at the China University of Geosciences, Beijing. He has had visiting placements at the Karlsruhe Institute of Technology (Germany), US Geological Survey in Denver (Colorado, USA) and Columbia University (New York, USA). Professor Guo was co-chair of the 7th International Conference on Arsenic in the Environment: Environmental Arsenic in a

Changing World (As2018) in Beijing. Currently, he is Editor-in-Chief of the *Journal of Hydrology* and Associate Editor of *Applied Geochemistry*. His three main research interests are as follows: 1) the sources, fate and transport of inorganic pollutants (e.g., arsenic, fluoride, uranium, and chromium) in aquifer systems; 2) characteristics and mechanisms of arsenic and fluoride adsorption on natural geomaterials; 3) biogeochemical behaviours of contaminants during mineral-water-microbe-organics interactions.

Elsevier/IAGC PhD Student Research Grants

The IAGC is happy to announce the recipients of the 2019 Student Research Grants, sponsored by Elsevier and the IAGC. This has become a very competitive award, with a funding rate of 15% for 2019. The success of the grantees demonstrates the extremely high caliber of their research. Congratulations to our grantees!



Alida Perez-Fodich earned her BSc and MSc degrees in geology at the University of Chile in Santiago. She is currently conducting her PhD research at the Department of Earth and Atmospheric Sciences at Cornell University (New York, USA). She researches chemical weathering across different scales in the critical zone and how this can influence elemental fluxes, hydrologic partitioning, and mineral reaction fronts, with a particular focus on weathering in the Island of

Hawai'i. Alida studies how chemical weathering plays a major role in flux export and long-term landscape evolution. For this purpose, she uses different geochemical tools, including reactive transport models, trace element geochemistry and synchrotron X-ray absorption near-edge structure (XANES) spectroscopy. She believes in using models

coupled with geochemical data to better understand the environmental conditions and chemical mechanisms that shape critical zone architecture to understand how natural systems work and their evolution in uncertain future scenarios.



Candan Desem graduated from the University of Melbourne (Australia) in 2014 with a BSc majoring in geology and environmental science where she used Pb isotopes as tracers of contamination in groundwater surrounding the Century Mine in NW Queensland (Australia). In 2017, after 2.5 years of working in the environmental sector, Candan returned to the University of Melbourne to commence her PhD in a collaboration with

Geoscience Australia (Australia's federal government agency for geoscientific research). Candan's PhD research further investigates the use of Pb isotopes as tracers for environmental contamination and mineral exploration on an Australia-wide scale, in addition to developing a fast, low-cost analytical method. The research will further encourage the use of this technique in source apportionment studies, both in academia and industry. One of the outcomes of Candan's research will be the generation of a Pb isotope regolith map of Australia. The samples used in this research were collected as part of the 2015 National Geochemical Survey of Australia (NGSA), and are used to undertake Pb isotopic analyses at the University of Melbourne Isotope Geochemistry Laboratory on a Sector-Field ICP-MS.



Kimberley Kanani Bitterwolf earned her BSc in global environmental science at the University of Hawai'i at Mānoa (USA). She is currently conducting her PhD research at the University of California, Santa Cruz (USA) in the Ocean Sciences department. The goal of her PhD research is to improve constraints on the chemistry of land-to-sea fluxes relevant for long-term paleoclimate reconstructions. More specifically, her work is focused on understanding the role that submarine

groundwater discharge plays in modern marine isotope budgets (e.g., Li, Mg, Ca, Sr, and Ba) and how these isotope systems co-vary with different weathering regimes. The isotope analyses of Li, Mg, Ca, and Ba are carried out on multi-collector inductively coupled plasma mass spectrometers (MC-ICP-MS) at the Czech Geological Survey, Princeton University (New Jersey, USA), GEOMAR (Kiel, Germany), and Woods Hole Oceanographic Institution (Massachusetts, USA), respectively. The analysis of the radiogenic and stable Sr isotope ratios are all conducted via thermal ionization mass spectrometry at GEOMAR. Kim believes that a better understanding of the magnitude and isotopic composition of these terrigenous fluxes to the ocean will improve long-term climate reconstructions that are based on their marine isotope budgets.



Marsha Allen is originally from the islands of Trinidad and Tobago and is currently a doctoral candidate in hydrogeology at the University of Massachusetts, Amherst (USA). She completed an AS in business administration at Kingsborough Community College (New York, USA) in 2007, a BA in geology with a minor in economics at Mount Holyoke College (Massachusetts, USA) in 2010. After obtaining jobs as an adjunct lecturer and laboratory technician she enrolled part time

in an MSc program in Earth and Environmental Science at Brooklyn College (New York, USA), which she completed in 2016. Marsha completed undergraduate and MSc research theses focused on carbonaceous chondrites found in meteorites. Her current research focuses

on the role of fractures and faults in groundwater flow in a bedrock aquifer system in the island of Tobago, with the aim of deciphering flow paths and groundwater mixing timescales with the use of major and minor elements, stable isotopes and environmental tracers. She plans to create a transient water model extending to the year 2100 to examine the water storage change in the island's subsurface on a monthly basis so as to enable a sustainable extraction rate of groundwater while accounting for projected shifts in climate.



Melisa Antonia Diaz graduated with a BSc in Earth and environmental science from the University of Rochester (New York, USA) in 2014 and an MSc in Earth sciences from Ohio State University (USA) in 2017. She became involved in polar research after a field campaign to Summit (Greenland) in 2014 and began Antarctic research during her MSc, where she studied the geochemistry of wind-blown materials in the McMurdo Dry Valleys. Melisa is now a PhD candidate at

Ohio State University studying the surface geochemistry of ice-free areas in the Transantarctic Mountains. Her dissertation focuses on understanding patterns of biogeography and ecosystem assembly from a geochemical perspective using soil samples collected along the Shackleton Glacier (Antarctica). She is using stable isotopes of S, N, and O in sulfate and nitrate to understand the sources of salts in polar desert environments and how soil geochemistry can be used to predict suitable habitats for Antarctic organisms.



Stephan Roman Hlohowskyj received his BSc in geology from the University of Las Vegas (Nevada, USA) in 2005 and his MSc in environmental science from the University of California, Riverside (USA) in 2008. In 2016, he began a PhD in geochemistry at Central Michigan University (USA) with a focus in molecular geochemistry. The main goals of his dissertation are to understand the behavior and geochemistry of molybdenum in sulfuric (euxinic) environments, in

both the recent and the ancient geologic past. Funding from IAGC will be used to analyze black shale samples with nano secondary ionization mass spectrometry (SIMS) in order to determine the isotopic signature of organic matter molybdenum associations.