



International Association of GeoChemistry

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IAGC AWARDS

Vernadsky Medal

2022



Susan Brantley is the Barnes Professor of Geosciences in the College of Earth and Mineral Sciences at Pennsylvania State University (USA), where she also has served as the Director of the Earth and Environmental Systems Institute since 2003. As a geochemist, Dr. Brantley focuses on understanding what controls the chemistry of natural water and how water interacts with the rocks through which it flows. Dr. Brantley and her

research group investigate chemical, biological, and physical processes in shallow hydrogeologic settings through field and laboratory work and theoretical modeling. Of particular interest are questions concerning the measurement and prediction of the rates of natural processes, including chemical weathering with and without microorganisms.

2020



Yousif K. Kharaka is a senior research hydrogeochemist with the United States Geological Survey (USGS), Water Mission Area, Menlo Park, California, USA. As a Research Scientist at the University of California, Berkeley (USA), and at USGS since 1975, he has been conducting field and laboratory geochemical investigations in the broad areas of water–gas–rock interactions over a wide range of salinity, temperature, and pressure conditions and

in a variety of natural and contaminated systems, especially in oil and gas fields in sedimentary basins, agricultural areas, and major hydrothermal and fault systems.

IAGC Fellows



Xiangdong Li is the Chair Professor of Environmental Science and Technology in the Department of Civil & Environmental Engineering, and the Ko Jan-Ming Endowed Professor in Sustainable Urban Development at The Hong Kong Polytechnic University. He is recognized for his innovative and dynamic work in environmental biogeochemistry, including research in the fields of regional contamination, urban air PM2.5 pollution, and the origin

and dissemination of antimicrobial resistance.



François Chabaux is a Professor CE (Distinguished Professor) at the University of Strasbourg, France. Over the last 30 years, François and his team have researched the mechanisms and time constants of weathering and erosion processes in critical zones by developing, using, and popularizing a variety of element and isotopic techniques, notably U-series nuclides. François has been also involved in the application of geochemical tracing approaches,

including classical radiogenic isotopes (Sr, Nd, Pb), U–Sr isotopic coupling, and stable isotopes (Ca, B, Li). More recently, he has investigated the nature of water–rock interactions that control the chemical composition of water in watersheds and aquifers by applying coupled hydrogeochemical modeling approaches.

Harmon Distinguished Service Awards



Philippe Négrel is a Senior Scientist at the French Geological Survey (BRGM) and has specialized in isotope geochemistry for 30 years. He has made interdisciplinary contributions in the fields of surface water–groundwater interactions, water–rock interactions, continental erosion, and tracing actual and paleo circulation. He is the Past-President of the IAGC, Chair of the EuroGeoSurveys Geochemistry Expert Group, and member of the Steering Board of the European sediment network SedNet.



Ian Cartwright has been with Monash University, Melbourne, Australia since 1990 and currently holds the position of Professor in the School of Earth, Atmosphere and Environment. His research involves application of geochemical tracers such as C-14, tritium, stable isotopes, radon, and major ions to document processes in groundwater and surface water systems. This work focusses on understanding water–rock interactions, the pathways and timescales of groundwater flow, the location and fluxes of groundwater inflows to rivers, and the residence times of water in river catchments. He has graduated 25 PhD students, several of whom have forged successful academic careers of their own. Ian was IAGC President from 2014 to 2016.



Neus Otero is the Serra Hunter Professor at the University of Barcelona, Spain. She is an internationally recognized hydrogeochemist having significantly contributed to the development of innovative geochemical and isotopic approaches for tracing water contamination and the effectiveness of remediation approaches. She has been strongly involved in the development of passive treatments for contamination remediation and new analytical

approaches to determine the isotopic composition of N species. Neus is highly active within the IAGC as the current President, serving an additional two years from 2019 through 2022.

INGERSON LECTURER



Martine M. Savard joined the Geological Survey of Canada (GSC) in 1990, and first applied her expertise to the study of Pb–Zn carbonate-hosted deposits and proposed new methods of exploration for this type of deposit. Early in her career, she developed the Delta-Lab, a stable isotope laboratory that she supervised for 27 years. Accordingly, Dr. Savard developed methodologies and applied stable isotope geochemistry in the fields of carbonate diagenesis, regional hydrogeology, pollution studies, atmospheric sciences, climate reconstruction, and clumped isotopes for basin analysis. She was concurrently an adjunct professor at INRS-ETE where she supervised over 20 graduate students. She now acts as an Emeritus Scientist at the GSC.

JIN JINGFU LECTURER



Yuan Mei was granted a PhD in geochemistry by the University of Adelaide, Australia in 2014. She worked as a Postdoctoral Fellow at the University of Adelaide and Monash University on an ARC Discovery Project during the period of 2013–2015. She has been working at the CSIRO Mineral Resources division since 2015. Her current role is that of a Senior Research Scientist in Geochemistry,

with research focuses on understanding the geochemical processes that govern element mobility and cycles from the mantle to the Earth's surface at the molecular level.

HITCHON AWARD



Pauline Smedley is a hydrogeochemist with over 30 years of experience working with the British Geological Survey on groundwater issues related to contamination, resource evaluation, and management. Her long-term research interests include processes controlling the mobilization and transport of trace elements of health concern in groundwater (Mo, U, As, F, Ni, Ra), the hydrogeochemistry of British aquifers, and groundwater quality for development in developing countries.

Smedley PL, Kinniburgh DG (2017) Molybdenum in natural waters: a review of occurrence, distributions and controls. *Applied Geochemistry* 84; 387-432 Cited 129 times.

ELSEVIER/IAGC PHD STUDENT RESEARCH GRANTS



Paul Kozol Wojtal received his BSc in chemistry from Brown University, USA in 2016, where he used the nitrogen isotopes of nitrate to understand road vehicle NO_x emissions. After working in the biotechnology pharmaceutical industry for three years, he started his PhD in ocean sciences at the Rosenstiel School for Marine and Atmospheric Science at the University of Miami, USA. He is currently using stable isotopes of carbon and

nitrogen in individual organic molecules (amino acids, lipids, etc.) to understand particulate organic matter dynamics in the upper water column. The main goal of his IAGC funded research is to use the stable carbon isotope composition of individual congeners of persistent organic pollutant molecules to understand biomagnification in particulate organic matter.



Amy D. Holt earned her BSc in geographical sciences at the University of Bristol, UK, and from there completed a MSc in chemical oceanography at Florida State University (FSU), USA. She stayed at FSU to conduct her PhD research, where she is undertaking a global assessment of mountain glacier dissolved organic matter (DOM) composition. Glaciers export ancient, highly biolabile DOM, which has been shown to be assimilated into

downstream food webs and thus is likely to play an important role in watershed biogeochemical cycling. Through this global assessment, and using a host of geochemical tools, including bioincubations, radio-carbon analysis, and Fourier ion cyclotron resonance mass spectrometry, Amy wishes to assess the spatial variability in, and the source of organic matter that underpin glacier DOM composition.



Sergio Gil Villalba graduated with a BSc in environmental science from the Universitat Autònoma de Barcelona, Spain in 2012. In 2018, he obtained his MSc in Groundwater and Global Change, an through Erasmus Mundus Master program (UNESCO-IHE Delft Water Institute, the Netherlands, Instituto Superior Técnico, Portugal, and Technische Universität Dresden, Germany). In 2019, he returned to Barcelona to commence a PhD

earth sciences at the Universitat de Barcelona. Sergio's PhD research focuses on remediation strategies for groundwater contaminated with

chlorinated volatile organic compounds. His research targets in situ chemical oxidation by persulfate injected into an alkaline permeable reactive barrier and bio-stimulation of autochthonous organohalide-respiring bacteria with emulsified vegetable oil. Laboratory batch experiments for the characterization of C-Cl and S-O 2D compound specific isotope analysis slopes will allow different degradative reactions that take place in field applications to be understood.



Tzu-Hao Huang received his BSc and MSc in oceanography from the National Sun Yat-sen University (Taiwan) and the Institute of Oceanography, National Taiwan University, respectively. He is currently a PhD student at the Department of Geological Science, Stockholm University (Sweden), focusing on marine silicate weathering. His PhD project aims to identify the reactants and products of marine silicate weathering and their relationship with carbon dioxide sequestration. Multiple techniques such as wet chemical leaching, isotope geochemistry (Si and K isotopic analyses using MC-ICP-MS), modelling, and X-ray-based analyses will be used in his study to fulfil this aim. The outcome will improve the knowledge of marine silicate weathering and its contribution to the global carbon and silicon cycle.



Ami Ward graduated with a BA in geology from the University of Florida, USA in 2015 and an MSc in geosciences from the University of South Florida in 2019. Ami is pursuing her PhD in isotope geochemistry at the University of North Carolina at Chapel Hill, USA. She is studying plutonic rocks from the Tuolumne Intrusive Suite, located in the Sierra Nevada batholith (California, USA). Her dissertation focuses on fluid-driven, late-stage, low-temperature (<600°C) mineral alteration in large bodies of granitic rock (plutons). Funding from IAGC will be used to analyze the B concentration and isotopic composition of biotite granitic rock samples from the Tuolumne using laser ablation-inductively coupled-mass spectrometry (single and multi-collector). Ami believes this work will provide insight into the continuum between metamorphic and igneous processes in granitic rocks as well as the evolution of magmatic-hydrothermal fluids associated with precious-metal deposits.



Ruth Esther Delina earned her BSc in geology from the University of the Philippines in 2016. At the same university, she worked as an instructor while pursuing her MSc in geology until 2020. She is now a doctoral student at the GFZ German Research Centre for Geosciences and Freie Universität Berlin, Germany. The main goal of her dissertation is to provide an in-depth understanding of the partitioning, speciation, and

binding mechanisms of Cr in mining-impacted Ni laterites. Using trace element geochemistry and atomic-scale investigations (e.g., transmission electron microscopy, synchrotron-based spectroscopy), Ruth will show how Cr is mobilized and re-sequestered in Ni mines and, in turn, contribute to the development of better strategies for water quality management in these environments.