Association of Applied Geochemists

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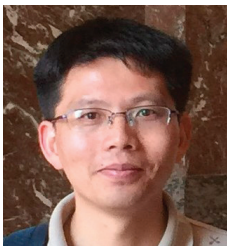
AAG PRESIDENT 2024–2025: YULIA UVAROVA

Yulia is the AAG's new President for 2024–2025. She obtained her BSc in geology from Moscow State University (Russia) in 2001 and her PhD in geology from the University of Manitoba (Canada) in 2008. From 2000 to 2002, Yulia worked as a research assistant at the Vernadsky Institute of Geochemistry and Analytical Chemistry in Moscow, Russia. From 2003 to 2008, she was a teaching assistant at the University of Manitoba. From 2008 to 2012, Yulia worked at Queen's University in the Queen's Facility for Isotope Research, where her research focused on geochemistry, mineralogy, petrology, and genesis of economic mineral deposits, uranium in particular; development of new exploration tools for search of U deposits; behaviour of HFSE in high-temperature systems; geochemistry of non-traditional isotopic systems and application of these systems to elucidate processes responsible for deposit formation. Yulia holds a research scientist position at CSIRO Mineral Resources in Perth, Australia, and works in a team of researchers developing new workflows and techniques for mapping the distal footprints of metalliferous mineral systems through drilling, sampling, and developing the science of understanding large geochemical footprints of mineral systems and their detection on the surface.

AAG VICE PRESIDENT 2024–2025: RENGUANG ZUO



Professor Renguang Zuo obtained his BS and PhD degrees from the China University of Geosciences (CUG), Wuhan, China in 2004 and 2009, respectively. He is currently a full professor at the State Key Laboratory of Geological Processes and Mineral Resources, CUG. In 2014, he was a senior visiting fellow at the James Cook University in Australia. Professor Zuo became a Fellow of AAG in 2016, and has held several positions within AAG Council, including Councillor of the Association in 2017–2018, 2019–2020, and 2022–2023; associate editor for *Geochemistry: Exploration, Environment, Analysis* (2017–2018); and editorial board member for *Geochemistry: Exploration, Environment, Analysis* (2019–present). He is a Councillor of the International Association for Mathematical Geosciences (IAMG) (2020–2024).

Professor Zuo has received fellowship status from the Society of Economic Geologists and Geological Society of London. He has been heavily involved on the editorial boards of several SCI-indexed journals, including *Natural Resources Research*, *Computers & Geosciences*, *Ore Geology Reviews*, *Journal of Geochemical Exploration*, and *Journal of Earth Science*.

The focus of Professor Zuo's research is big data analytics and machine learning–based mineral prospectivity mapping and geochemical anomaly identification. Professor Zuo has published over 160 peer-reviewed journal papers, six books and book chapters, and has been the Guest Editor of eight special issues in high-quality international journals. His publications have amassed over 7,500 citations (Google Scholar) across a range of esteemed international journals.

RECENT ARTICLE PUBLISHED IN EXPLORE

The following abstract is for an article that appeared in issue 202 (March 2024) of the EXPLORE Newsletter.

"Heavy Mineral Exploration on the Continental Scale"

Alexander T. Walker[1], Brent I.A. McInnes[1], Patrice de Caritat[1,2], Evgeniy Bastrakov[2]

Heavy mineral techniques have been successfully used as exploration vectors to ore deposits around the world. However, published heavy mineral exploration case studies and pre-competitive datasets relevant to Australian conditions are relatively limited. The Heavy Mineral Map of Australia (HMMA) project, part of Geoscience Australia's *Exploring for the Future Program* (https://www.eftf.ga.gov.au/), addresses this gap by defining a heavy mineral (specific gravity >2.9 g/cm^3) baseline across approximately 80% of Australia from a set of 1315 floodplain sediment samples obtained from Geoscience Australia's National Geochemical Survey of Australia (NGSA) project. Automated mineralogical analysis of heavy mineral concentrates derived from the detrital sample materials reveals an abundance of heavy minerals in Australian drainages. Outputs include mineral abundance data and associated metrics, a mineral distribution atlas, and a curated archival collection of 1315 polished mount samples containing heavy minerals. The associated mineral library comprises more than 160 unique mineral phases, including minerals that are of significant utility in both academic research and mineral exploration such as zircon, apatite, gahnite, and base metal sulphides. The massive number of unique mineral measurements generated by the project (>140 million) required development of a novel Mineral Network Analysis (MNA) tool to allow end users to discover, visualise and interpret mineral co-occurrence relationships. The mapping function of the MNA tool can also be used to rapidly search the heavy mineral database for the purpose of exploration targeting. It is anticipated that the HMMA datasets and the archival heavy mineral collection will be important research resources for decades to come.

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The full article of the above can be viewed at: https://www.appliedgeochemists.org/index.php/publications/explore-newsletter.