



Association of Applied Geochemists

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DR. DAVID COOKE – AAG CAMERON-HALL COPPER MEDAL AWARD FOR 2020



The Association of Applied Geochemists is pleased to announce that the Cameron-Hall Copper Medal for 2020 is awarded to Dr. David Cooke, Director of the Centre for Ore Deposit and Earth Sciences (CODES), University of Tasmania, for his paper that appeared in GEEA volume 20 (p. 176-188):

“Recent advances in the application of mineral chemistry to exploration for porphyry copper–gold–molybdenum deposits: detecting the geochemical fingerprints and footprints of hypogene mineralization and alteration”

By David R. Cooke, Paul Agnew, Pete Hollings, Michael Baker, Zhaoshan Chang, Jamie J. Wilkinson, Ayesha Ahmed, Noel C. White, Lejun Zhang, Jennifer Thompson, J. Bruce Gemmell, Leonid Danyushevsky, and Huayong Chen.

David Cooke completed his PhD at Monash University in Melbourne, Australia in 1991. He joined the faculty of the University of Tasmania and since 1998 has led numerous team-based industry-funded research projects. He has been CODES Director since 2017.

The Cameron-Hall Copper Medal is the newest medal of the AAG, first awarded last year for the year 2019. The Association annually awards the medal to the lead author of the most outstanding scientific publication in our journal *Geochemistry: Exploration, Environment, Analysis* (GEEA). It is named in honour of two prominent and highly published AAG members and past editors of GEEA, Eion Cameron and Gwendy Hall. Both are the only AAG Gold and Silver Medal awardees since the Association was formed over 50 years ago. Selection of the winning paper is highly competitive. The GEEA Editorial Board first recommends four nominees from those papers published during the year. The members of the AAG Awards & Medals Committee vote on the list of recommendations, and their selection must then be approved by a majority vote of the AAG Council. More information is available on the AAG website <https://www.appliedgeochemists.org/association/awards>.

Formal presentation of the Cameron-Hall Copper Medal to Dr. Cooke will take place at the 29th International Applied Geochemistry Symposium (IAGS) in Chile in October 2022.

Stephen Cook

AAG Past President
Chair, Awards & Medals Committee

RECENT ARTICLES PUBLISHED IN *EXPLORE*

The following abstract is for an article that appeared in issue 190 (March 2021) of the *Explore* newsletter.

“Minor Elements – the Middle Child between Petrochemistry and Geochemistry”

Robert G. Garrett¹

Some 30 years ago I wrote an article for *Explore* titled ‘A Cry from the Heart’, then four years later, ‘Another Cry from the Heart’, both concerned the application of statistical procedures to geochemical data. I cannot write ‘Another another ...’, but that is what this is, and this time the cry concerns the data and how they are reported. It has been demonstrated that the reporting of minor element data in whole rock, ‘Total’, analyses is inadequate for geochemical studies. The frustration that this unnecessary inadequacy is the reason for this ‘Cry’, the ‘Another another ...’. The minor elements are the awkward ‘middle child’ between the major and trace elements. Their reporting is torn between the needs of petrochemists and geochemists. This is unnecessary. There is no reason multiple reporting styles cannot be supported, and data not castrated by reporting with insufficient non-zero significant figures. It is the hope of the author that this article will initiate a conversation between the scientists who use the data and the laboratories who provide them, so that no information is wasted.

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The following abstract is for an article that appeared in issue 191 (June 2021) of the *Explore* newsletter.

“Integration of Geochemical and Mineralogical Data: An Example from the Central Victorian Goldfields, Australia”

Dennis Arne²

Recent advances in Compositional Data Analysis (CODA) have provided a solution to the Harker diagram problem, where due to the fact that the data sum to a constant, e.g., 100%, the displays make no sense in terms of petrological and mineral stoichiometry knowledge. The article employs the Nockolds data set for major element average compositions of igneous plutonic rocks as the basis for a brief tutorial focusing on the Si-Al, Ca-Na and K-Ti relationships in the data. The transformation of the data pairs into symmetric coordinates permits displays of the element relationships free of the constraints of closure. As a result, Si and Al are seen to increase sympathetically from femic to felsic rocks; Na to decrease with increasing Ca from felsic to femic rocks and in the albite-oligoclase solid solution; and the inverse relationship between K and Ti to become much clearer due to the reduction of the impact of the remaining parts of the composition. The procedure also permits the estimation of correlation coefficients free from the effects of closure. R scripts are provided for the necessary computations and displays, together with the Nockolds data and examples of the use of the R functions.

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