Goldschmidt 2025 Abstract
https://doi.org/10.7185/gold2025.32104

Ensuring an Inclusive Scientific Culture for Developing and Maintaining Standards Required for the Creation of Global Networks of Geochemical and Isotopic Data Repositories.

LESLEY A. I. WYBORN[1], JENS KLUMP[2] AND REBECCA FARRINGTON[3]

[1]Australian National University
[2]Commonwealth Scientific and Industrial Research Organisation
[3]AuScope

For centuries, geochemical data has been collected on samples from around the world. Over time. geochemistry as a discipline has evolved from low throughput, manual analytical techniques to the highly computerised laboratories that rapidly produce voluminous highly diverse geochemical and isotopic datasets on samples down to the atomic scale. Today, geochemical datasets and databases are characterised globally by small-sized, highly variable datasets. There is a growing awareness of the lack of consensus-driven standards required to make geochemical and isotopic research data globally Findable, Accessible, and Interoperable and Reusable (FAIR) for both humans and machines. However, the creation of such consensus driven standards demands a fully scientific inclusive culture in which geochemists from around the world can participate and contribute their specific use cases.

One surprising impact of COVID19 was that it democratised research in unexpected ways. Conferences and standards meetings all went virtual: participation was only restricted by available bandwidth and the cost of connecting to the internet (although time zones could be inconvenient).

However, whilst the availability of online participation was initially high, it has decreased markedly with many conferences/meetings going back to fully online, or just making the recordings available during or after the event. Apart from ignoring the high environmental costs of in-person international meetings, the costs of travel are prohibitive for many, particularly those from the Global South. There is now a growing awareness that some meetings to develop standards for interchange of scientific data are not as inclusive as they could be, with participation limited to those that can afford to attend. Language is also a barrier as standards are commonly developed in English.

If we truly want to create global networks of geochemical data, then we need to seriously consider better ways of ensuring we are inclusive of those that cannot attend in-person meetings and be mindful of language. Addressing the issues will take time, including who is going to drive (and fund) the need for a greater global scientific inclusive culture that transcends location, costs, language, etc to create the standards to underpin global networks of seamless, FAIR, AI-ready geochemical datasets and databases.