

## **Open and FAIR Data and Software - Important Elements of Open Science**

**SHELLEY STALL**

American Geophysical Union

Presenting Author: [ssall@agu.org](mailto:ssall@agu.org)

Research data and software are valuable contributions to the scientific record along with papers, methods, and more. As we seek to make research more accessible through Open Access initiatives, we should also promote the importance of making the data and software that support our research more transparent and connected. Well-documented data and software that can be discovered separately from the paper and is preserved in a FAIR-aligned repository helps to provide what is needed to evaluate and replicate research. Data and relevant software should be cited in the paper's reference section to allow for automated attribution and credit as its own research output. These citations allow for linking with the paper when persistent identifiers are used. In our work at the American Geophysical Union and with our broad international Earth, space, and environmental sciences community, we have put into place journal policies requiring that data and relevant software be described in the availability statement, and cited in the references. As conveners of the Enabling FAIR Data project (<https://copdess.org/enabling-fair-data-project/enabling-fair-project-overview/>) that includes over 500 international stakeholders and signatories, we continue to work with publishers and data repositories to put into place the practices needed to ensure all research data are discoverable and well-documented supporting the FAIR principles. We have made good progress, and in this talk will share the current status and focus areas of our work. Open and FAIR data and software as a goal requires everyone in the research community to participate. We encourage you to start or continue your journey towards making open and FAIR data and software part of our research culture.