Geosciences and Data

Data Management Assessment Program
Earth and space science data are critical to scientific advancement and our understanding of how natural systems and phenomena change over time. These data should be openly accessible and preserved for reuse into the future.

AGU is committed to data stewardship and preservation through its publication guidelines and policies. AGU adopted a Data Position statement that defined the importance of data in scientific research and emphasized their value in contributing to scientific advances that positively impact society.

The Challenges
Data collection and analysis are a cornerstone of scientific research, yet no universal standards exist for the curation and preservation of Earth and space science data that make them readily accessible to inform other scientists or future research. Challenges include:

- Earth and space science data are created in large amounts every day and need to be collected, curated, and stored. Each year that volume increases.
- Data are diverse, and not all scientific domains have a repository that supports their specific requirements. Data can include physical samples, perishable field observation data, and various forms of digital information.
- Researchers must publish their data in its final form when required by publishers, but the raw data or interim data products may also be needed for other scientists to understand or reproduce the science.
- The quality and completeness of metadata can vary because not all repositories follow the same standards. Determining if existing data can be reused for new research requires complete and accurate metadata.
- Funding open access data, managed and preserved in a discoverable repository, and determining who is financially responsible for the steps in the data storage process are an issue.

Improving and Advancing Data
How do we as a community ensure the long-term preservation of all Earth and space science data? Cultural changes that recognize the role data managers play in academia and research, community-backed guidelines, and technical tools are needed to ensure data are open, accessible, and understood.

To address these challenges, AGU has developed the Data Management Assessment Program, which helps data repositories,
large and small, domain specific to general, use best practices to assess and improve their data management practices.

This program provides assessments by certified experts in data management using the rich CMMI® Institute Data Management Maturity (DMM)™ framework and was adapted by AGU to meet the specific needs of the Earth and space sciences. The assessment helps repositories and institutions understand leading practices for data management and storage and identifies steps for improvement and adhering to these practices through a road map of initiatives customized for the organization on the basis of their current capability and data management objectives.

Reasons to Participate in a Data Management Assessment

- Establish an objective baseline of data management practices that will drive existing and future process improvement activities
- Identify strategic initiatives in the form of a road map to strengthen the data management program
- Identify areas for improved efficiency and sustainability on the basis of the goals of the organization
- Develop an understanding of the current state of data management practices and work products
- Provide assessment attendees with an understanding of data management best practices so that they can employ this knowledge in their daily activities

To discuss how an AGU Data Management Assessment can help you successfully meet your data management objectives, contact Shelley Stall, Assistant Director, Enterprise Data Management, at sstall@agu.org.

dataServices.agu.org/dmm