

The Truth about Quality Assurance and Data Management

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NARSTO data are potentially useful to the scientific community now and for many years to come. Three elements determine how useful they actually are: whether the data are (1) quality assured and therefore of consistent and known quality; (2) provided with metadata; and (3) available and findable (actively archived). The first (QA) and second (metadata) elements are prerequisites for the third (archiving).

Although effective QA is common in NARSTO programs, documentation of data and development of organized metadata is problematic. PIs know what they need to use their data in relatively raw form. When the need arises, typically late in the project, for PIs to assemble the metadata and put the data in a format suitable for long-term archiving, the information is harder to find and assemble, and their focus is on the next project. As a result, data are left behind in formats unsuitable for archiving.

The NARSTO Quality Systems Science Center (<http://cdiac.esd.ornl.gov/programs/NARSTO/>) has two main components: assisting NARSTO projects with QA planning, and coordinating data management. The QA planning component emphasizes making use, where possible, of institutions' existing quality assurance programs rather than developing substantial new quality documentation. The data management component provides guidance for putting data into the NARSTO Data Exchange Format, which incorporates metadata and data quality information. It also permits automated QA checking of files and transferring files to the NARSTO Permanent Data Archive (http://eosweb.larc.nasa.gov/PRODOCS/narsto/table_narsto.html).

Funding agencies need to ensure that active data coordination and management components are integrated into NARSTO programs from the design stage onward if the Data Exchange Standard is to be used broadly to make data publicly available. Other helpful components would include using recent Web technologies to facilitate controlled sharing of data and metadata, and increasing professional recognition for PIs who make it possible for their data to be permanently archived.

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