Increasing the Impact of Your Research by Enabling Persistently FAIR Physical Samples: The System for Earth Sample Registration (SESAR)

Megan Carter Orlando¹, Kerstin A. Lehnert², Lulin Song², Kelsey Markey²
¹Earth Science Information Partners (ESIP), ²Lamont-Doherty Earth Observatory of Columbia University

Physical Samples are a 1st Class Research Product

- Physical samples advance science as they record unique events in history, help to unravel past climate, and provide access to the inaccessible.
- Physical samples are both research resources and research products and should be FAIR.

Samples are a Public Good

“Publicly funded data are a public good and should be publicly preserved and sustained over time. They should be made as open as ethically possible to maximize scientific, economic, and societal returns.”

“GSA supports the preservation of geoscience samples and data sets for the public good and urges public and private sector organizations and individuals to routinely catalog and preserve their collections and make them widely accessible.”

Samples should be FAIR

- Data (& samples) should be findable on the internet.
- Data (& samples) should be accessible in a usable format with clear rights and licenses.
- Data (& samples) are identified in a unique and persistent way so that they can be referred to and cited and interoperable.
- Data (& samples) should be documented with rich metadata to be re-usable.

SESAR (www.geosamples.org)

- Online registry for physical specimens & samples
- Ensures preservation & persistent access of sample metadata
- Supports the discovery and access of the physical objects
- Allocating agent of the IGSN (International Geo Sample Number)
- persistent & globally unique identifier for samples
- Provides tools for investigators and institutions to register samples and manage sample metadata.
- Searchable catalog, further improving sample discovery and re-use.

Recent Enhancements

- New metadata fields: for example, samples may now have release dates when sample metadata becomes public.
- Evolving vocabularies
- New sample types: for example, “Experimental Specimen” is now an accepted object type.

Challenges and Opportunities

- Use of SESAR has grown beyond individual investigators to include repositories, museums, and large-scale scientific initiatives.
  - Growing volumes of registrations
  - Growing diversity of sample types
  - Growing demands for diverse curation workflow support and varying sample management needs
- Requires adjustments in architecture and functionality
  - Tools and services that support the diverse user requirements
  - More scalable and flexible data model & system architecture
- Requires community consensus on metadata and vocabularies for new sample types


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