Data Services for Long Tail Science at the Integrated Earth Data Applications (IEDA) Data Facility

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What is IEDA?

IEDA, or Integrated Earth Data Applications, is a community-based data facility funded by the US National Science Foundation (NSF) to support, sustain, and advance the geosciences by providing data services for observational solid earth data from the Ocean, Earth, and Polar Sciences. IEDA is a partnership between EarthChem and the Marine Geoscience Data System.

Long Tail Science encompasses that done by individual researchers and relatively small labs. They collectively produce the bulk of scientific knowledge, but due to their heterogeneous nature, tend to have the least developed data services and systems.

1. Data Access

IEDA operates and maintains a suite of data systems and data collections that provide access to a wide variety of solid earth data from the marine, terrestrial, and polar environments.

Catalogs, maps, and data are delivered through standard programmatic interfaces, and a variety of OGC-enabled clients can be used to directly access some of our content through web services.

- Sample-based data
  - EarthChem Portal, PetDB, Geochron

- Sensor-based data
  - MGDS Data portals, Global Multi-Resolution Topography Portal

Images, videos, photos, diagrams

2. Data Analysis

IEDA develops and supports tools that facilitate data access and visualization, and that provide analytical capabilities to promote the use of data within the scientific community and for educational purposes.

Visualization tools:
- Create maps, plots, animations
  - GeoMapApp
  - Virtual Ocean
  - EarthChem Portal

Data Integration Tools:
- Synthesize, compare
  - PetDB
  - SedDB

3. Data Management and Reporting

IEDA offers simple tools to help investigators manage data and comply with funding agency data policies.

1. The Data Management Plan Tool allows a user to create new plans, save, and retrieve past plans.

2. The Data Compliance Reporting Tool for demonstrating data products from U.S. NSF Grants

3. SESAR (System for Earth Sample Registration) is a sample registry that distributes the International Geo Sample Number (IGSN) unique sample identifiers.

4. Data Templates for organizing and documenting analytical lab data

4. Data Publication

IEDA offers data publication services that registers primary scientific data in the DOI system, making them citable as publications with attribution to their investigators as authors. IEDA assigns DOIs to dataset. Long-term availability is guaranteed through a collaboration with Columbia University Digital Libraries.

IEDA DOI Search