

# NASA ESDIS Standards Office

<https://earthdata.nasa.gov/eso>



The ESDIS Standards Office (ESO) assists NASA's Earth Science Data and Information System (ESDIS) project in formulating standards policy for NASA Earth Science Data Systems, coordinates standards activities within ESDIS, and provides technical expertise and assistance with standards related tasks within the NASA Earth Science Data System Working Groups (ESDSWG).

ESO maintains a list of standards and practices approved for use in NASA Earth Science Data Systems that promote the FAIR principles. A complete list can be found at: <https://earthdata.nasa.gov/standards>

## Impacts of ESO Standards

- Recommendations from **ESDSWG Data Interoperability and Data Quality Working Groups** are being incorporated into the **Data Product Development Guide for Data Producers**
- **Standard data formats, metadata models, and protocols** are supported by common tools like **Panoply** and **IDL**
- **Standard metadata and protocols** provide for international and multi-agency data discovery for example **OpenSearch, DIF, GCMD Keywords, ISO 19115**
- **Data Quality recommendations** from the **Data Quality Working Group** were incorporated into **NASA's Earth Science Data Management Plan Templates**

## Findable

- ISO 19115 Geographic Information Metadata Standard
- Digital Object Identifiers (DOIs) for EOSDIS
- Unified Metadata Model (UMM)
- Global Change Master Directory (GCMD) Keywords
- GCMD Directory Interchange Format (DIF)
- EOS Clearinghouse (ECHO) Metadata Standard
- CEOS OpenSearch
- Search Relevance Recommendations for Earth Science

## Interoperable

- Hierarchical Data Format (HDF) 5
- HDF Earth Observing System (EOS) 5
- Network Common Data Form (NetCDF) Classic
- NetCDF-4 / HDF 5 File Format
- OpenGIS® KML
- ASCII File Format Guidelines for Earth Science Data
- GeoTIFF File Format
- Dataset Interoperability Recommendations for Earth Science
- NetCDF Climate and Forecast (CF) Metadata Conventions

## Accessible

- The Data Access Protocol - DAP 2.0
- Mapping HDF5 to DAP2
- OpenGIS® Web Map Service
- Polling with Delivery Record (PDR) Mechanism

## Reusable

- NASA Earth Science Data Preservation Content Specification
- Data Management Plan Templates for Data Producers and DAACs
- Data Quality Working Group's Comprehensive Recommendations for Data Producers and Distributors
- Reuse Readiness Assessment of Data Quality Software Products

## ESO Standards Interest Group

ESO leads the Standards Interest Group (SIG) to maintain broad communications among stakeholders about ESDIS standards activities. ESO hosts webinars, telecons and meetings of the SIG to exchange information, to provide standards coordination, and identify emerging standards that may be useful in NASA Earth science data systems.

<https://wiki.earthdata.nasa.gov/display/ESO/ESO+Standards+Interest+Group>

### ESO Staff

**Chris Lynnes, NASA**  
NASA Earth Science Data and Information System Project (ESDIS)

**Yonsook Enloe**  
Science Systems and Applications, Inc. (SSAI)

**Helen Conover**  
University of Alabama in Huntsville

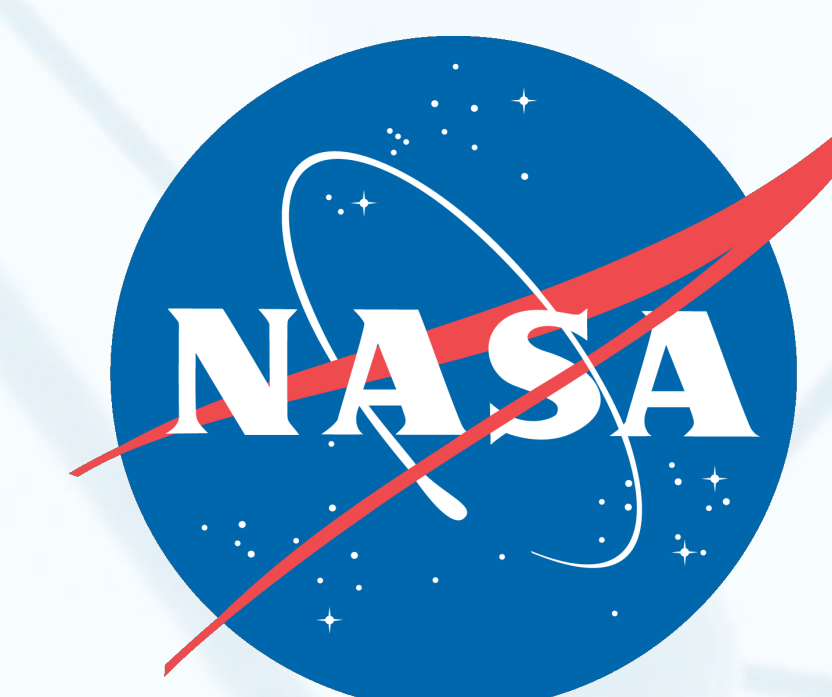
**Allan Doyle**  
International Interfaces, Inc.

**John Scialdone**  
Center for International Earth Science Information Network (CIESIN)/Socioeconomic Data and Applications Center (SEDAC)

**Yaxing Wei**  
Oak Ridge National Laboratory (ORNL)

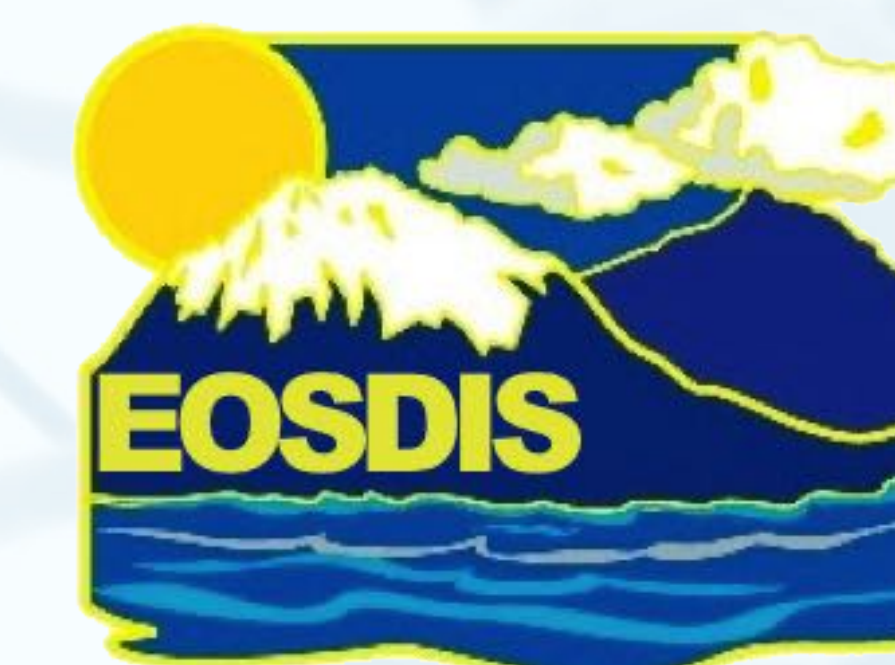
### Contact us:

[eso-staff@lists.nasa.gov](mailto:eso-staff@lists.nasa.gov)  
[earthdata.nasa.gov/eso](https://earthdata.nasa.gov/eso)



### ESDSWG Liaison

**Steve Olding**  
SSAI



### Acronyms not spelled out elsewhere

ASCII	American Standard Code for Information Interchange
CEOS	Committee on Earth Observation Satellites
DAAC	Distributed Active Archive Center
DAP	Data Access Protocol
EOSDIS	Earth Observing System Data and Information System
FAIR	Findable, Accessible, Interoperable, Reusable
GeoTIFF	Geographic Tagged Image File Format
IDL	Interactive Data Language
ISO	International Organization for Standardization
KML	Keyhole Markup Language
NASA	National Aeronautics and Space Administration