ESS-DIVE Training Sessions

data.ess-dive.lbl.gov
Overview and Agenda

All ESS researchers looking to use ESS-DIVE will benefit from this training

- Brief overview of ESS-DIVE with Q&A (30 min)
- 3 parallel training sessions (1 hr 30 min)
  - New user bootcamp
  - Project data management
  - ESS-DIVE data and metadata formats
- Google Drive:
  [Link](https://drive.google.com/drive/folders/1fTC83n9ohx8eaMvdTaTetadOKCOrNqol9)
Goals for ESS-DIVE Training Sessions

Start publishing your data on ESS-DIVE
Good data management practices

FAIR Data
Use ESS-DIVE community formats to make your data more visible and reusable

Utilize Project Data Management Capabilities
Project data management tools and support
ESS-DIVE Team

ESS-DIVE Leadership

Contact us at any time at ess-dive-support@lbl.gov
What is your primary role in your research group?

- Data Collector
- Modeler
- Other Data User
- PI
- Data Manager
Familiarity with ESS-DIVE

- published datasets previously
- future data contributor
- downloaded data
- attended previous ESS-DIVE presentation
Reasons to publish data

Journal and BER ESS requirements

Most journals are starting to require data associated with paper findings, figures, and tables to be publicly available on a long-term data repository. Include DOIs, such as those issued by ESS-DIVE, in the Data Availability section of a paper.

Share your work with the community

Gain publicity from data publications, similarly to journal publications. Allow others to use your work for future studies.

Promote FAIR data practices

Findable, Accessible, Interoperable, and Reusable. Data reporting formats and metadata requirements abide by these standards.

DOI: Digital Object Identifier
Where to publish data

Environmental Systems Science Data (ESS-DIVE)

ESS funded projects are required to store data on ESS-DIVE

Accepts observational, experimental, sampling, and modeling data

NSF Arctic Data Center (ADC)

National Center for Biotechnology Information (NCBI)

National Microbiome Data Collaborative (NMDC)

Environmental Data Initiative (EDI)

United States Geological Survey (USGS) ScienceBase

Earth System Grid Federation (ESGF)

Repository: a place to store data
1. About ESS-DIVE

Charuleka Varadharajan
What is ESS-DIVE?

Data Repository to preserve access to and improve usability of ESS data

Findable Accessible Interoperable Reusable

Use of ESS-DIVE is mandatory for ESS project data management plans

data.ess-dive.lbl.gov

576 public datasets
Scope of ESS-DIVE Data

- Data from projects funded by or related to DOE Environmental System Science Program
- Observational, experimental, and modeling activities in the Earth sciences.
Easy Upload Capabilities & Broad Data Availability

Data Package Upload

Data Contributor

Web portal

Data Package Archive

ESS-DIVE Data Package Archive

Fusion Database

Advanced search

Integration

Visualizations

Data Preservation

- Replication, auditing and redundancy
- Cross-catalog search
Supporting and Engaging the ESS Community

- **WEBSITE, TWITTER, COMMUNITY EMAIL LIST**
- **DOCUMENTATION**
- **TUTORIALS/ANNUAL WORKSHOP**
- **HELP DESK**
- **ESS-DIVE Bootcamp**
  - April Webinar
  - April 27, 2020 10:00-11:00
- **MONTHLY WEBINARS**
- **1:1 MEETINGS/SITE VISITS**
- **COMMUNITY GITHUB**
- **PUBLICATIONS**

Launching an Accessible Archive of Environmental Data
A new digital archive enables community use of terrestrial and subsurface ecosystem data sets.
Which of these terms are you familiar with?

- Metadata
- Data package
- Repository
- DOI
- Persistent identifier
- ORCiD
- All of the above
- What are these?
Components of a dataset (data package)

**Dataset**

**Data Files**: Include data files, all data relevant to scientific findings and figures/tables of a paper, or all data necessary for replication of the science.
- Measurements
- Model inputs, outputs, code, scripts
- Supporting information, maps, documentation

**Metadata**: Include information to allow other users to interpret whether your data package is useful to their purposes.
- Purpose of the data
- Contents of the data files (results, variables, etc)
- Temporal and geographic information
- Instructions for use

**Data Files: csv, images, code, kml**

**Metadata: Data / info about data**
Terms to keep in mind

**Data Storage**
- Repository
  - A central location for long term data storage
- Published Data
  - Data that has been made publicly accessible

**Metadata**
- Descriptive information about data files

**Dataset/Data Package**
- Combination of data files and metadata

**Publishing Terms**

**Persistent Identifiers**
- ORCiD
  - For people; permanent link for your professional activities
- DOI
  - Persistent identifier that links to data on the internet

https://ess-dive.lbl.gov/acronyms/
ESS-DIVE provides ...

1. Metadata standards for data packages
2. Community reporting formats for several ESS data types
3. Guidance related to data packaging and authorship
4. Curation of metadata and ensures file readability
5. Digital Object Identifier and citation text for published data
6. Long-term data search and download availability

ESS-DIVE is the DOE BER ESS location for long-term data preservation
2. Today’s Training Sessions

Tutorial Leads
Breakouts

All ESS researchers looking to use ESS-DIVE will benefit from these trainings

- **New ESS-DIVE Users**: Publish and search on ESS-DIVE
- **PIs and Data Managers**: Manage project data on ESS-DIVE
- **Any researcher**: Learn to use new ESS-DIVE community data formats
New User Bootcamp

New users can learn how to search for ESS-DIVE data and create and publish their own datasets.

- Learn core components of datasets and ESS-DIVE publication requirements
- Create and submit a practice dataset on the ESS-DIVE Sandbox
- Understand how to search for and download data
Project Data Management Tutorials

PIs and Data Managers can learn about ESS-DIVE support for project data management

- Understand what capabilities ESS-DIVE offers that you can use in a data management plan
- Learn about current and upcoming ESS-DIVE features that you can use to organize your project data and teams
- Become aware of ESS-DIVE outreach efforts to projects
ESS-DIVE Data and Metadata Formats

Data managers and data collectors will learn how to make data more accessible and reusable

- Learn about ESS-DIVE data reporting formats
- Hands-on workshop with metadata and CSV file reporting formats
- Hear how 2 DOE projects are applying reporting formats to their data
Connect With Our Team!

To get help:
- ess-dive.lbl.gov
- ess-dive-support@lbl.gov
- docs.ess-dive.lbl.gov

To stay updated:
- ess-dive-community@lbl.gov
- @essdive

Acknowledgements
Advisory Groups: ESS-DIVE Archive Partnership Board, ESS Cyberinfrastructure Working Groups
Funding: EESSD Data Management
Questions?