DATA MANAGEMENT & PRACTICES IN THE U.S.

PICES International Open Science Training 2024

Jeanette Gann

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

- **FAIR:** All NOAA data will follow FAIR principles to ensure it is **F**indable, **A**ccessible, **I**nteroperable, and **R**eusable
- **Plan** and design the project, program, or research from onboarding to project closure, including methods and resources for data management.
- **Preserve**: Identify essential records, and determine methods required to preserve them.
- **Access:** Ensure timely internal and public access to data and metadata
- **Describe:** During data collection and creation, document data and collection processes through metadata
- **Track** data and metadata throughout the lifecycle and monitor application of data management principles.
- **Quality:** Ensure the quality, objectivity, utility, and integrity of the data.
- **Protect** data from unauthorized access, corruption, and theft.
- **Cite** any data with DOIs in manuscripts and other publications

Data

DATA MANAGEMENT CHALLENGES

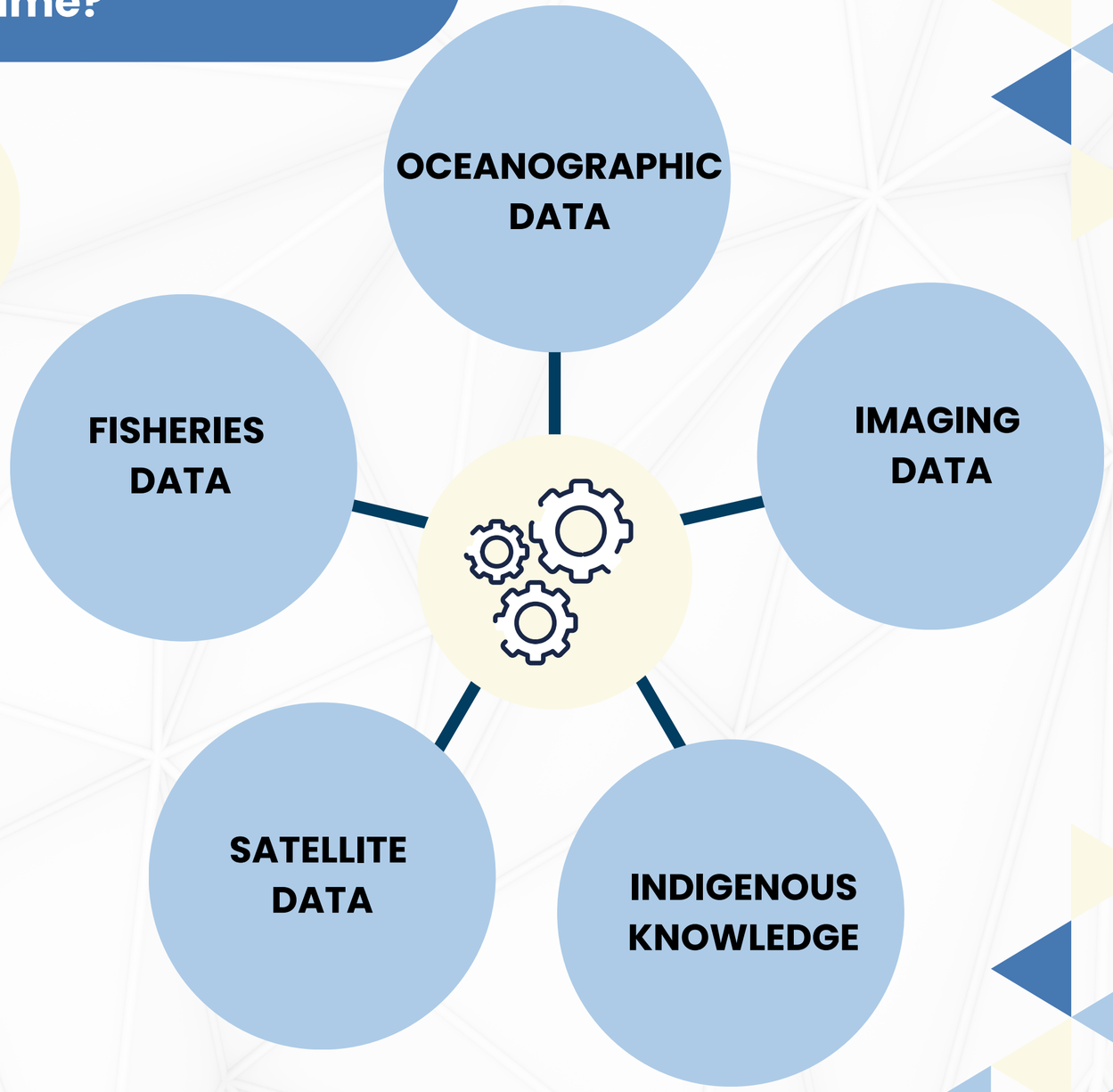
- **Skills**
  - skilled personnel with database management knowledge
- **Funding**
  - Funding to hire new personnel, data servers, cloud services, virtual machines,etc.
- **Changing Data**
  - Need for new platforms to manage new types, and increasing amounts of data

How do we access multiple data types within the same geographic and temporal frame?

DATA PLATFORM INTEROPERABILITY

- Repositories often made for different data types
  - Raster data (layers; satellite, oceanography)
  - Fisheries data (mulitple types)
  - eDNA data
  - Image data (storage space)
  - Video, Audio

- Connecting different repositories together (standardized metadata)



Suggestions for Data Management

ALWAYS HAVE A DATA PLAN!

PROJECT CONCEPT

- Start thinking about data right now!

STRATEGY

- Data type
- collection protocols
- QA/QC
- Products resulting from project
- Metadata

REPOSITORIES & DOI

- Talk to data managers at your work
- Find best repository for your data
- Ask about use of digital object identifiers (DOIs)

Suggestions for Data Management

SHARE YOUR INFORMATION AND PRODUCTS

MANUSCRIPTS

- If possible publish your data in open access journals
- --> Increases visibility of your work

CODE

- Sharing Code through a Github account
- -->Version Control, Encourages Collaboration

MODELS

- Share your models openly
  - Github
  - publish
- -> Increased visibility for your work, networking

SKILLS

- Share skills -> increases networking and collaborations

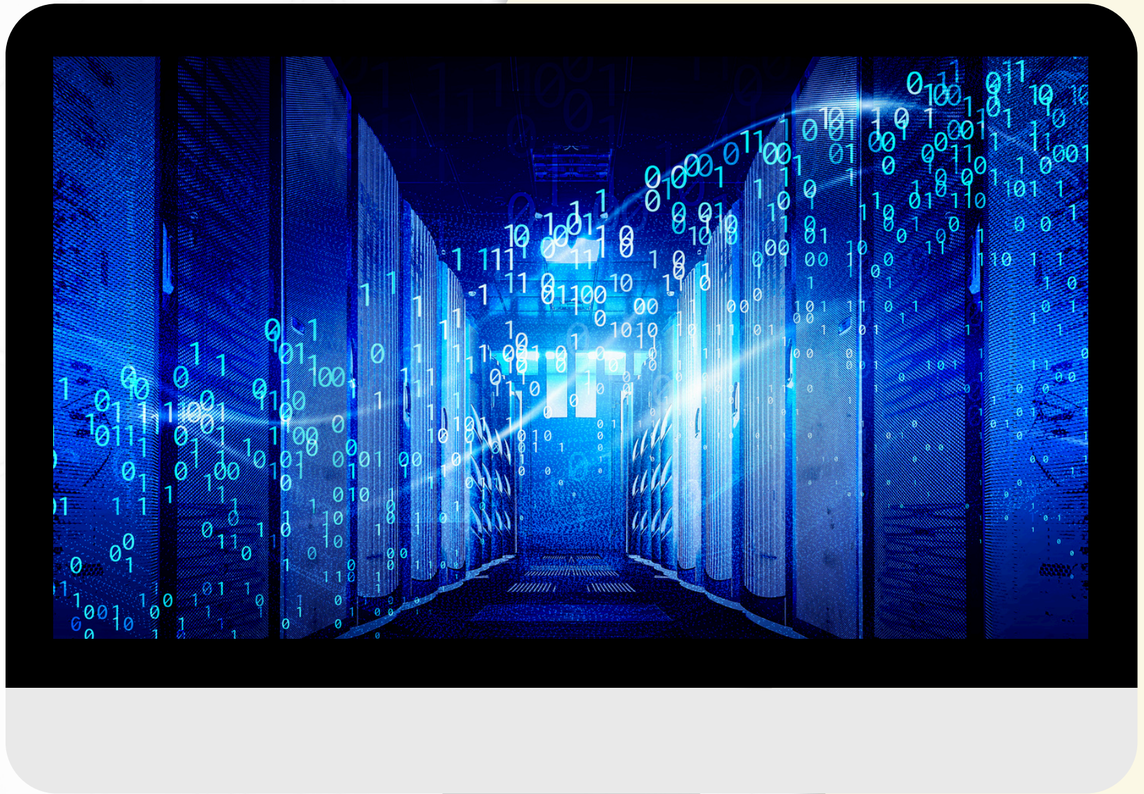
Finding Ocean Data and Information Online

National Centers for Environmental Information

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

The World Data System is an interdisciplinary body of the International Science Council working to provide universal, equitable access to data around the world.

- **Look for Data**
- **Upload your data**
- **Long term Archives**
- **Offers DOIs**



Finding Ocean Data and Information Online

OPEN DATA REPOSITORIES

International Oceanographic Data and Information Exchange

IODE promotes the global sharing of ocean data and information. Lists open data repositories and catalogs

OCEAN DATA INFORMATION SYSTEM (ODIS)

The Ocean Data and Information System (ODIS) catalogue of sources

online browsable / searchable catalogue of existing ocean related data and information.

AQUADOCS

Document repository covering natural ocean related environments

OTHER RESOURCES

NOAA DATA POLICY

NOAA DATA STRATEGY

NSF DATA GUIDE

GITHUB TUTORIAL

QUESTIONS?

THANK YOU!

2021 2030 United Nations Decade of Ocean Science for Sustainable Development