The GES DISC Vision
To enable researchers and educators maximize knowledge of the Earth by engaging in understanding their goals, and by leading the advancement of remote sensing information services in response to satisfying their goals.

The GES DISC Approach

- **Engage Users**
  - Communications must be frequent
  - Dedicate points of contact to gather/provide information are identified
- **Build economically**
  - Look for reuse, ways to save funds
  - Willing to take calculated risks; Otherwise low risk
- **But also, to build new technologies**
  - Engage employees
  - Ensure that employees value the importance of their contributions
  - Treat all employees equally

We will not: Build it and they will come.
We will: Build it because they come (collaborating on mutual interest)

Successes

- **Up to date on all Mission reprocessing and documentation**
  - Successfully released first products produced for newest missions: GPM, OCO-2, SNPP
- **Completed transition to dynamic web page capability, driven by EMR web documentation**
  - Released new version of Giovanni (smoothing maps, histograms, download Giovanni maps, etc.)
- **Delivered the first version of Unified User interface with support for faceted navigation**
  - Completed population of HRDLS data and documentation into preservation system; Other datasets in the works
- **Deployed User Registration for GES DISC services and data access**
- **Recovered heritage data (Nimbus, orphan) from 1960’s vintage media. Rescuing data continues.**
- **GES DISC is now a recognized data repository by Scientific Data, an open-access, peer-reviewed journal for descriptions of scientifically valuable data sets**

Challenges

- **Efficiently adapting potentially useful advancing technologies to specific problems**
- **Facilitating science research or the masses, based on a handful of use cases**
  - Rapidly responding to the needs of users needs for value added products, tools, and services
  - So much to do... so little time to do it.

Best Practices

- **Implement in response to user driven needs**
  - LANS, but also user feedback, user surveys, science meetings
- **Seek opportunities for collaboration**
  - EOSDIS driven, but also new shareable initiatives
- **Strategically utilize technology to enhance efficiency in the face of growing archives and number of users**
  - To improve understanding for sharing relevant information technologies, but also engage science data users and information technologies
- **Partner w/users and producers**
  - Remain expert in Atmosphere, Hydrology, Climate Modeling data (both NASA and other) and data management services, but also engage science research and applications users to better understand their needs, and improve GES DISC services
- **Publish results for the betterment of information science**

Who We Are: Summary of Expertise

- **Science Data Management** – Ph.D. scientists in applicable earth science disciplines who collaborate with researchers to develop data reconfiguration/application tools to facilitate information extraction and multi-project data coordination; Who understand how data was generated and provide user support
- **Mission Support** – Engineers who understand the requirements for costing and storing information management systems for new or existing missions
- **Software Engineering** – Engineers who understand the most effective advanced technologies to further mature data management system usability and efficiency
- **Operations** – XS (24 x 7 x 365) staff that understands the importance of, and ensures, continuous data ingest, processing, archive and distribution

Stewarding Mission Data

- **Data Access and Processing Services (Ad Hoc)**
  - Data ingestion,
  - Data quality screening
  - Data storage
  - Data stewardship
  - Caching
  - Cloud applications
  - Unified User Interface

The GES DISC ‘World’

- **Science User/Data Support**
  - Receive and display data, science, service requires daily
  - Understand and develop new research driven tools and services
  - Analyze metrics to address research need priorities
  - Perform Outreach, Documentation, Capturing data preservation artifacts
- **Mission Support**
  - Build tailored archive, distribution, service system requirements of new project. Develop IDocs. Ensure formats and metadata guidelines are met
  - Build/have system(s) effectively to spec, Interfaces work
  - Statement of work (SOW) for each major effort, Celcius Pages
- **Software Engineering**
  - Lead overall system architecture planning/implementation
  - Implement and analyze cloud computing application prototyping
- **Operations**
  - Ensure data ingest, archive, and distribution
  - Apply system monitoring tools to enhance operations efficiency
- **Management**
  - Manage a diverse staff and set of functions: Contracts, cooperative agreements, budgets, ~60 people, new business, system ownership, etc.

CURRENT OPERATIONAL SERVICES/TOOLS

- Giovanni – Data Discovery, Visualization and Exploration
- WDCS (Web Data Catalog Search) – search and access
- Simple Subset Wizard – Cross DISC/IR/ACROSS effort to provide subsetting
- Data Recipes
- GSNAP & GISDS Data Server
- Open Geospatial Consortium (OGC) Web Map Service (WMS)
- Data provided in various formats (KML, netCDF, ASCII, kml, others)
- Shapefiles – Specific for applications
- Data Reduction – Submit derived measurements from data products
- User Registration
- **Digital Object Identifier and Landing Pages**
- **Data Stewardship**
  - **Caching**
  - **Cloud applications**
  - **Unified User Interface**

The GES DISC is one of 12 Discipline-oriented NASA Data Centers

World Data System Members Forum – Sept. 11, 2016, Denver, CO