



GHRC Overview and Highlights

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2018 GHRC User Working Group Meeting
November 13-14, 2018



Overall Organization

The ESDIS Project Supports		
Science System Elements	Distributed Active Archive Centers (DAACs)	12
	Science Investigator-led Processing Systems (SIPS)	15

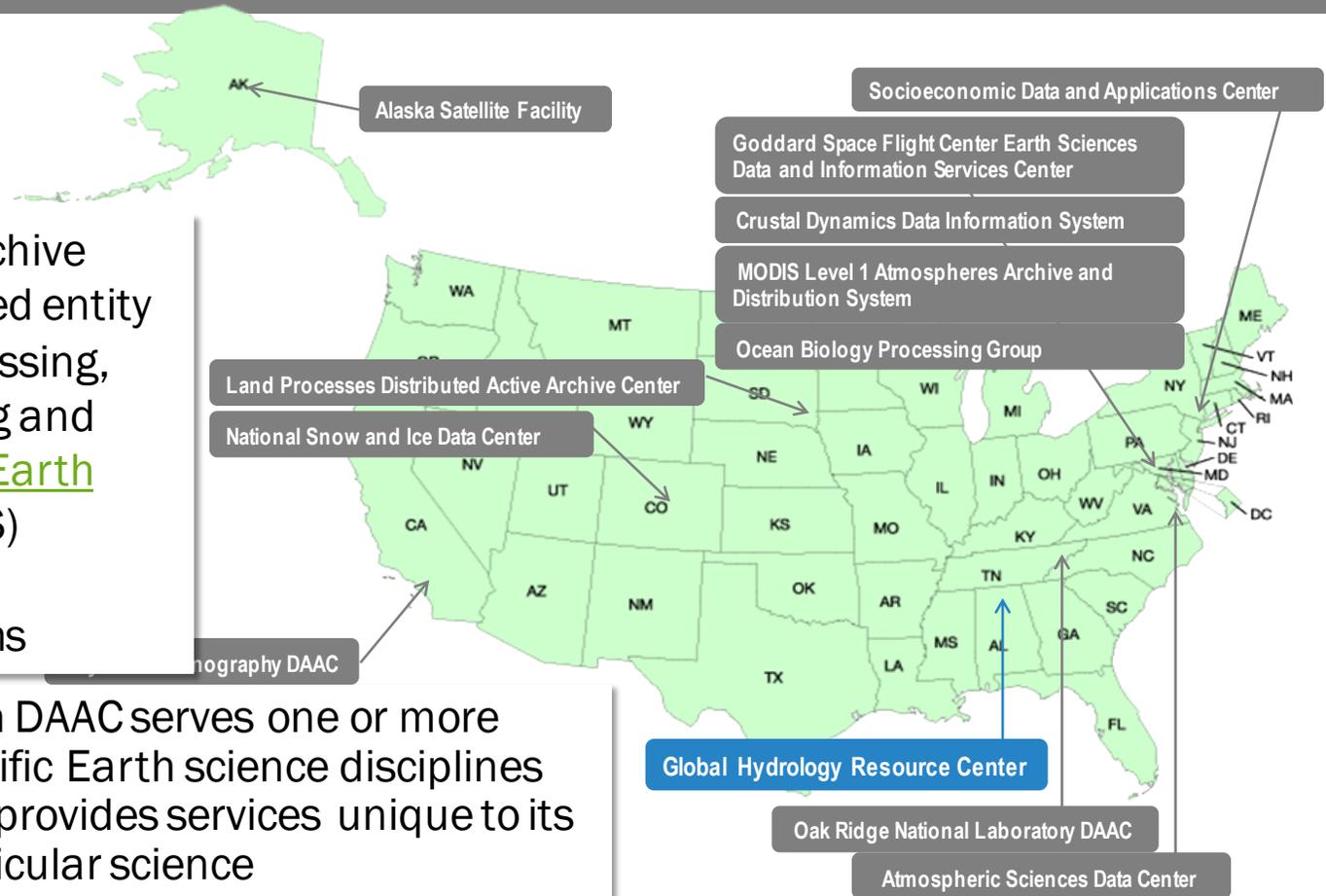
HQ: <https://earthdata.nasa.gov/earth-science-data-systems-program/about-the-esds-program>

GSFC: <https://earthdata.nasa.gov/about/esdis-project>

NASA's Earth Science DAACs

A Distributed Active Archive Center is a NASA-funded entity charged with the processing, archiving, documenting and distributing data from [Earth Observing System](#) (EOS) satellites and field measurement programs

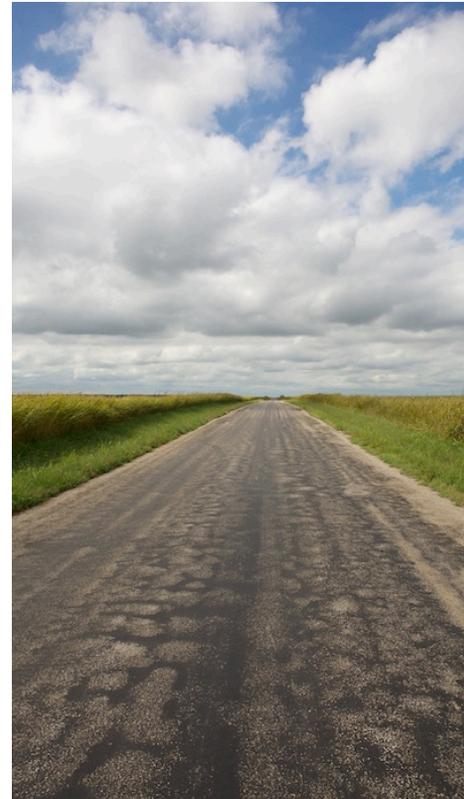
Each DAAC serves one or more specific Earth science disciplines and provides services unique to its particular science



Vision Statement

*GHRC subscribes to the NASA
ESDS Vision:*

Make NASA's *free* and *open*
Earth science data *interactive*,
interoperable and *accessible* for
research and societal benefit
today and tomorrow.



Mission Statement

To provide a comprehensive active archive of both data and knowledge augmentation services with a focus on *hazardous weather, its governing dynamical and physical processes, and associated applications.*

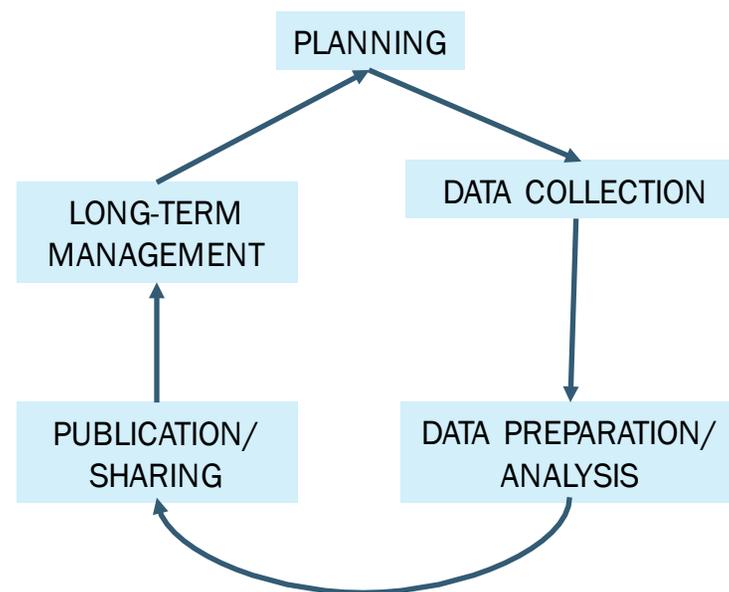
Focus on *lightning, tropical cyclones, and storm-induced hazards* through integrated collections of satellite, airborne, and in-situ data sets.

<http://ghrc.nsstc.nasa.gov/>



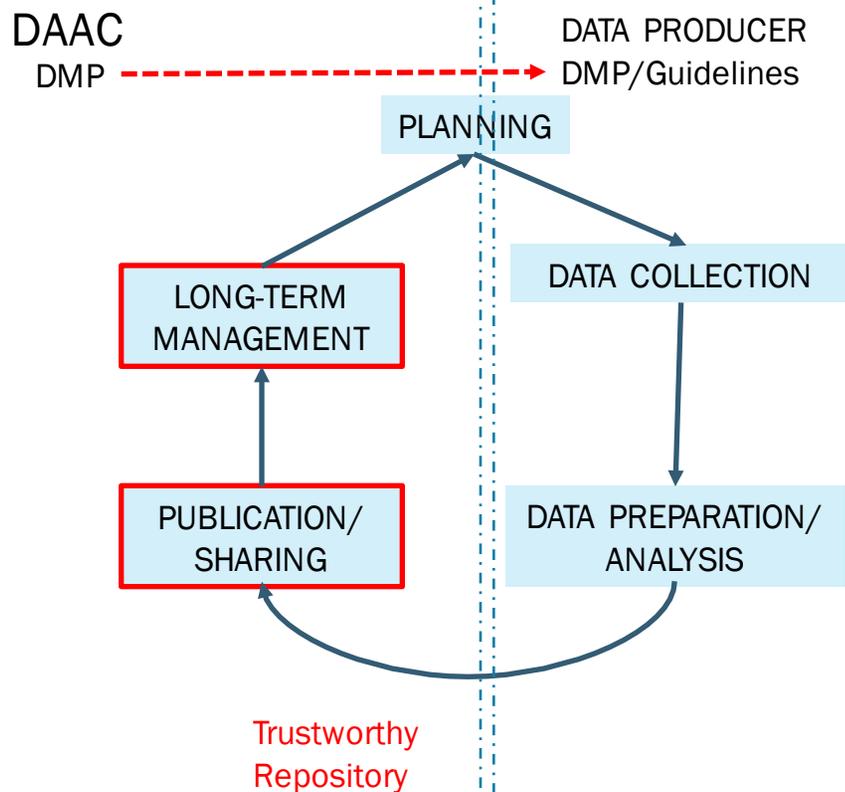
Research Data Life Cycle

- Can be depicted in multiple ways
- Represents the various stages that data go through during a research project
- Data management occurs across the entire research data lifecycle

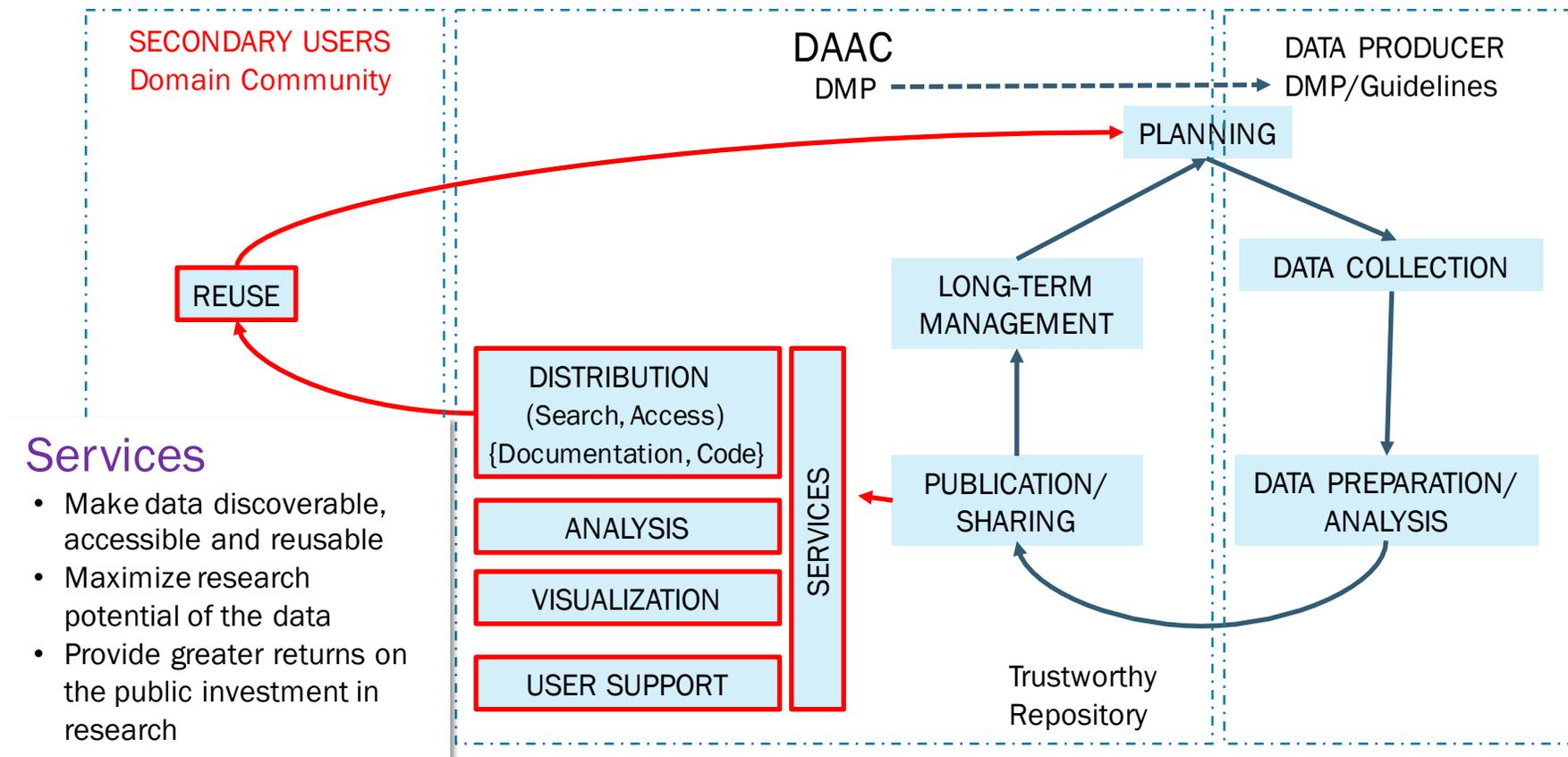


Data Stewardship Responsibility

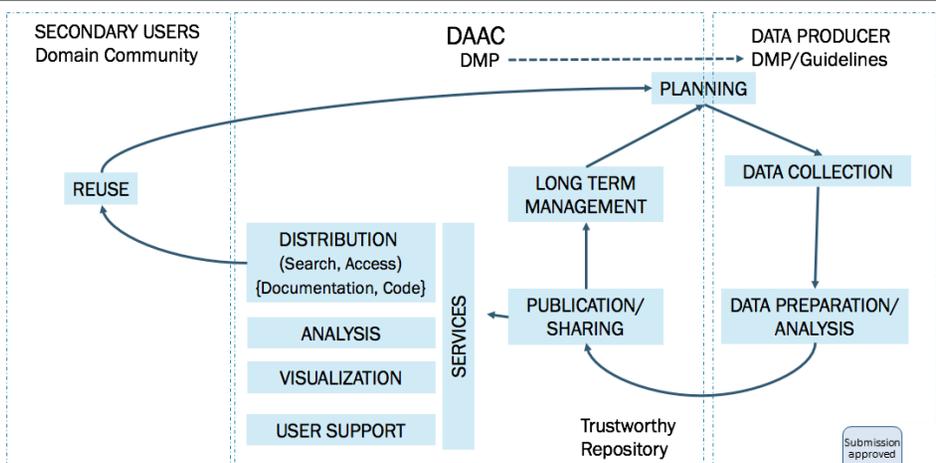
- Assist data producers in developing Data Management Plans (DMPs) to support transparency and openness during research phase
- Use DAAC DMPs to efficiently manage data
- Utilize **workflows and policies in accordance with standards** to serve as a trustworthy repository



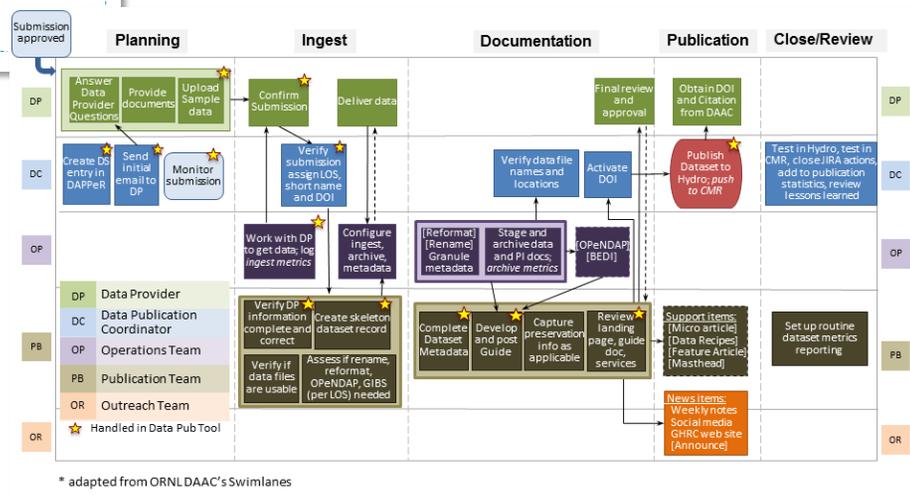
DAAC Role in Supporting Science



Creating a Common Process for Different Data Sources



1. Assigned Satellite Mission (LIS)
2. Assigned Field Campaign (GPM-GV)
3. SIPS/MEaSURES Program
4. Recommendation from the User Community
 - UWG/ESDIS/HQ Approval



Data Management
Outreach
User Services

IT & Operations

System
Development &
Architecture

2018 Key Personnel Changes

- New DAAC Manager
- New software developers
- New agile manager
- DAAC Scientist (ongoing search)
- Outreach team

GHRC UWG Board Members

<i>Discipline</i>	<i>Name</i>	<i>Affiliation</i>	<i>Term end</i>
Lightning	Steve Goodman	Private company (ret'd NOAA)	2019
	Michael Peterson**	U Md / NOAA CI for Clim&Sat	2019
	<i>Weixin Xu</i>	Colorado State University	2021
Passive Microwave	Joe Munchak	NASA GSFC	2021
	<i>Joe Turk</i>	NASA JPL	2021
Hurricane Science	Haiyan Jiang	FIU	2020
	Jonathan Zawislak	FIU, UMiami/CIMAS,HRD	2019
	Jason Dunion	Univ. Miami/CIMAS,HRD	2020
Global Precipitation Mission	Dan Cecil	NASA MSFC	2019
	Ana Barros	Duke University	2020
	Pierre Kirstetter*	Univ of Oklahoma	2020
Severe Wx	Emily Berndt	NASA SPoRT	2020
Applications	Eric Anderson	NASA MSFC (SERVIR)	2020
	Dave Jones	StormCenter Communications	2020
	<i>Albert Kettner</i>	University of CO Boulder	2021
Program Scientist HQ (ex officio)	Gail S. Jackson	NASA HQ	
	Kevin Murphy	NASA HQ	
ESDIS (ex officio)	Jeanne Behnke	NASA GSFC	
	Drew Kittel	NASA GSFC	
	Steve Berrick	NASA GSFC	

**2018 Chair, *2018 Co-Chair; new members added in 2018 *italic*

State of GHRC (FY 18)



Operational Improvements

- Agile development and management
- Formalized internal process documents

Cloud Migration

- Training
- Cumulus
- Published major datasets to Test environment

Web Improvement

- Google analytics 360
- Lightning web
- Field Campaign Collection

New Data Services

- Earthdata drive
 - Bulk download issue from last year
- Subscription service

Metadata Improvements

- Analysis and Review of Common Metadata Repository
 - Collection - 100% complete
 - Granules - 70% complete

Ongoing Tool Improvements

- DAPPeR – Data Publication
- HyDRO 2.0 – Data Search

Datasets Publication

- 74 datasets
- Key datasets
 - GPM-GV
 - Hurricane
 - Lightning

Community Engagement

- Systematic engagement with Science Teams
- Micro Articles
- Data Recipes
- Virtual Collections
- Mastheads
- Webinar
- ESRI Story Map
- Conferences/Meetings
- Collaborations within MSFC Earth Science Office
 - DEVELOP Program

Looking to the Future (FY19 and Beyond)

- Data publication
- Strategic acquisition of data based on HQ/ESDIS directives and portfolio gaps
- Cross-DAAC Collaborations
 - Earthdata Pub (Common Data Publication Workflow Framework) with ORNL, GHRC, NSIDC, GES-DISC
 - Virtual collection
 - ESDIS activities– UI/UX, Service Architecture, User Needs, Cloud Primer
- Field Campaign Explorer release
- GHRC data migration to the cloud
 - Transition to using Cumulus as the ingest, processing and distribution
 - Develop and integrate Earthdata Pub MVP into Cumulus
 - Provide all GHRC data on AWS cloud by end of FY19

GHRC User Working Group Mandate

Primary objectives include but are not limited to:

- Suggesting **improvements to enhance overall user experience** including discovery, access, and usability of data
- Suggesting new **research and development ideas** relevant to GHRC to support product/tool prototyping and generation
- Facilitating **communications with the general user community** and interested members of other communities
- Assisting GHRC in **prioritization and pursuit of new data holdings** within the bounds of budget and ESDIS mission constraints



2017 UWG Recommendations



Recommendations	Accomplishments
<p>Recommendation #1: NASA Headquarters, the Weather Focus Area of the Earth Sciences Division, Applied Sciences Division, and the GHRC UWG should work with GHRC to provide strategic advice and support on creating a 5 and 10 year plan that improves the link between the mission of the GHRC, its data holdings, and potential applications.</p> <p>This should also involve more engagement between the GHRC and UWG members throughout the year (e.g., webinars with focus area representatives on the UWG).</p>	<p>Work Plan for FY2019 thru FY2025 in preparation. We have a brainstorming session this afternoon to get your advice and ideas for data holding improvement. <i>(PM Activity)</i></p> <p>NASA Webinar collaboration with Michael Peterson, Micro Article collaboration with Ana Barros, and GHRC participation in AMS Hurr. Trop Met meeting Town Hall panel on airborne data with Jon Zawislak. <i>(S4)</i></p>
<p>Recommendation #2: Data sets related to the validation of NASA-sponsored precipitation products are critical to both assessing and improving satellite products. The UWG should work with the GHRC to identify critical missing data elements in their holdings as well as data sets that would both help in validation efforts and be of great use to the end user community.</p>	<p>New datasets for GHRC archival to include ICE-POP GPM GV validation and GOES-R PLT validation campaign data <i>(S3)</i>. PM activity to brainstorm more ideas.</p>
<p>Recommendation #3: GHRC should pursue/develop a plan to become an event-driven repository for major hydrometeorological events (i.e., Hurricane Harvey) to provide a bundled set of datasets that enable researchers to analyze the event. GHRC should also pursue opportunities to submit supplemental funding requests (e.g., "Harvey") through NASA to identify and collect relevant datasets.</p>	<p>Introduction to REACT tool <i>(S5)</i> as an example of possible capability. Demo of REACT during PM break.</p>
<p>Recommendation #4: Determine the possibility of getting land data from SWOT mission at the GHRC to complement hazardous weather related to floods caused by excess precipitation. This would complement other flood and extreme event (including precipitation) data sets.</p>	<p>Met with Jessica Hausman after last UWG meeting (Sep 2017). No further action taken.</p>

2017 UWG Suggestions

Suggestions	Actions
<p>Suggestion #1 : Extend outreach efforts beyond meteorological meetings. Carefully consider, survey, select and focus on topical professional meetings. Focus on more than just presentations and consider exhibitor booths.</p>	<p>Participated in AGU exhibit booth and NASA Hyperwall Flash Talks. Attended AGU, AMS, AMS Hurricane and Trop Met, GLM meetings. (S4)</p>
<p>Suggestion #2: Explore adding advanced, impact-based user metrics that are more informative as to the end-to-end user activity.</p>	<p>Trained for and implemented Google Analytics (GA360) and added tags for use with tag manager. Use Tableau for server metrics. Metric reports shared with management. Some metrics presented in (S3) and (S4).</p>
<p>Suggestion #3: Provide an update at the 2018 UWG meeting on the progress and usage of DAPPeR.</p>	<p>DAPPeR used to significantly reduce datasets awaiting publication. Kept rate of publication consistent with 2017 post implementation rate (S3). Also added knowledge and skill to Earthdata Pub efforts (S5)</p>
<p>Suggestion #4: Continue to provide updates on VISAGE and the development of FCX tools.</p>	<p>VISAGE project going well, presentation in afternoon session showing progress. Plans for FCX work in FY2019. (S5)</p>



THANK YOU!

Questions?

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