U.S. IOOS 2023 DMAC
ANNUAL MEETING AGENDA
September 26 - 28

SILVER SPRING CIVIC BUILDING
One Veterans Place
Silver Spring, MD 20910

U.S. IOOS Slack Workspace (ioos.slack.com)
For those who aren't yet members: https://tinyurl.com/join-ioos-slack
Channel: **#2023_dmac_meeting**

DAILY AGENDA:		
Tues (Day 1):	**Wed (Day 2):**	**Thu (Day 3):**
09:00 - 12:00 Presentations/Plenary	09:00 - 12:00 Presentations/Plenary	09:00 - 12:00 Breakout Discussions
12:00 - 13:00 Lunch	12:00 - 13:00 Lunch	12:00 - 13:00 Lunch
14:20 - 16:30 Breakout Discussions	14:10 - 16:30 Breakout Discussions	13:00 - 15:00 Breakout Discussions
16:50 - 17:05 Close out	16:40 - 17:00 Close out	15:00 Meeting End
17:05 Meeting End	17:05 Meeting End	

Tuesday, September 26th

Location: Silver Spring Civic Building:
- Spring Room (Plenary/Breakouts)
- Ellsworth Room (Breakouts)

0830 Arrival, coffee

0900 Introduction/Meeting Kickoff (Micah Wengren/Mathew Biddle/IOOS) ([slides](#))

0910 US IOOS Office Updates (Becky Baltes/IOOS) ([slides](#))

0925 Global Ocean Monitoring and Observing (GOMO) and IOOS: Future opportunities for aligning data communities of practice (Ann Zinkann, Alyse Larkin, Cindy Garcia/GOMO)
- Introduce GOMO's data efforts briefly including the recent community workshop, our plans for the strategy and implementation plan.

0945 CIOOS Updates (Ray Brunsting/CIOOS) ([slides](#))
- What's been happening at CIOOS and what comes next
- What could expanded CIOOS/IOOS collaboration look like

1005 OTN, ATN, Nodes, and OBIS (Jon Pye/OTN, Angela Dini/OTN) ([slides](#))
- Progress and growth in building US-based and global telemetry communities currently coordinated around OTN Data Nodes
- Data pipelines towards publishing data, especially into OBIS via OTN's role as thematic OBIS node for animal movement data
- OTN - ATN Federal acoustic telemetry support, coordination and archival pipelines

1020 Break

1040 Towards a Prototype National Harmful Algal Bloom DAC: Successes, Challenges, and Lessons Learned (Rob Bochenek/Axiom)
- Support network of Imaging Flow CytoBots (IFCBs) in California and beyond
- Quasi-operationalize multistage data processing pipeline from delayed mode manual processing to automated and near real time
- Facilitate community convergence upon data/metadata standards, protocols and best practices
- Produced new data storage and data serving approaches and technologies
- Quick Demo

1100 SoundCoop - Passive Acoustic Monitoring Access Network (Carrie Wall/NCEI) ([slides](#))
- The IOOS-BOEM-Navy-ONR funded Sound Cooperative (SoundCoop) project is building community-focused national cyberinfrastructure capability for PAM data, technology, and best practices to promote improved, scalable and sustainable accessibility and applications for management and science.

- Driven by partnerships and framed by four case studies, the SoundCoop has established guidance on the standardized processing of sound level metrics using free software toolkits and begun developing core cyberinfrastructure components that future PAM projects can leverage.

1120 Data Management Workflow and Challenges in Developing a California Ocean Acidification and Hypoxia Data Portal (Marine Lebrec/CeNCOOS) ([slides](#))
- Overview of chemical and biological datasets related to ocean acidification and hypoxia that CeNCOOS and Axiom Data Science have been working on ingesting into our CalOOS data portal from various sources (sensors, satellite products, model outputs, discrete samples)
- Provide examples of data management steps and challenges involved in this project, as well as next steps.

1140 Standardizing Marine Biological Data working group update (Tim Van Der Stap/Hakai) ([slides](#))
- Updating the community on 4 years of Standardizing Marine Biological Data working group activities
- Providing context and structure of the group, and highlighting its successes

1200 Lunch

1300 ATN data pipeline updates - GTS/OceanOPS and NCEI (satellite telemetry sharing) (Megan McKinzie/ATN) ([slides](#))
- Animal borne platforms: BUFR table updates, GTS data pipeline overview and metadata integration into OceanOPS
- ATN collection: Operationalizing satellite telemetry data submissions to NCEI

1315 Application of Cloud-Native Solutions to challenging datasets (Kelly Knee/Audra Luscher) ([slides](#))
- Using Kerchunk, Intake Catalogs, Nebari, and Dask to streamline workflows for the NCDIS 40-year reanalysis dataset
- Using Kerchunk and event driven workflows to facilitate access to the National Water Model's short term forecast

1335 Overview of Breakout Sessions (5 min each)
- Breakout #1: DOI generation by NCEI ([slides](#))
- Breakout #2: Tools and Best Practices for Data Pipeline Documentation
- Breakout #3: Kerchunk/Xpublish overview/setup

1350 Break

1405 Breakout Discussions

Breakout #1: DOI generation by NCEI - update and figure out process for generating DOIs Leads: Tim Boyer, Sarah O'Connor	Session Description: • Introduce NOAA DOI best practices and gain a greater understanding of community stakeholder requirements related to the usage of digital persistent	Room: **Spring** Notes: 📄 DMAC 2023 Breakout: DOI gen…

Breakout #2: Tools and Best Practices for Data Pipeline Documentation - a working group to share your methods and learn from others. Leads: Tylar Murray	Session Description: • Establish a shared vocabulary on the topic of data provenance • Identify extant and emerging toolings for data pipeline documentation • Inspire ways to improve FAIR-ness of extant data products	Room: **Ellsworth 1** Notes: 📄 DMAC 2023 Breakout: Tools an…
Breakout #3: Overview of Kerchunk/Xpublish (preview for Thu full day breakout/working session) Leads: Jonathan Joyce, Alex Kerney, Matt Ianucci, Kristen Thyng	Session Description: •	Room: **Ellsworth 2** Notes: 📄 DMAC 2023 Breakout: Over…

1640 Breakout Report Outs/Daily Wrap

1700 Adjourn Day 1

1700 - 1930 PM Happy Hour at McGinty's Public House

911 Ellsworth Dr, Silver Spring, MD 20910, 5 min walk from SSCB

Wednesday, September 27th

Location: Silver Spring Civic Building:
- Spring Room (Plenary/Breakouts)
- Ellsworth Room (Breakouts)

0830 Arrival, coffee

0900 Daily Meeting Overview/Kickoff (Micah Wengren/Mathew Biddle/IOOS)

0905 NCOS Coastal Reports and Ocean Finder: Real Time Geoanalytics of IOOS Data Streams in Support of Marine Spatial Planning (Rob Bochenek/Axiom) ([slides](#))
- Introduce NCOS Coastal Reports and NCOS Ocean Finder - two different approaches to geo-analytics for marine spatial planning
- Introduce approaches and technologies for high performancespatial indexing and geo-analytics of heterogenous ocean data (Geotiff, NetCDF, Shapefile, GeoJSON)
- Apache Spark, Apache Sedona, GeoParquet, and H3 Spatial Indexing Algorithms
- Clustering, data partitioning and optimization
- Quick Demo

0925 Extending data services beyond the US EEZ (Felimon Gayanilo, GCOOS) ([slides](#))
- GCOOS efforts to obtain and serve data beyond the US EEZ, specifically extending the grid and serving HF radar data in the Yucatan (Mexico)
- Challenges and successes in serving data beyond the US territory

0945 NERACOOS Infrastructure Update (Alex Kerney, Dylan Pugh/NERACOOS) ([slides](#))
- Moving to modern workflow tools to improve observability, scalability, and recoverability
- Declare the mess, let the engine sort it out

1005 GLOS Updates: Seagull Update/Overview + Technical Overview (Joe Smith/GLOS) ([slides](#))
- New features and features planned, including favorites lists, Omics, and more
- Infrastructure updates and updates in the works, including caching, NCEI pipeline, and general archiving

1025 Break

1100 HF Radar Range Series Archival Project Status Update (Shane St. Savage/RPS) ([slides](#))
- Near-real time end-to-end delivery of range series files from initial operator (UCSB/Brian Emery) HFR computers to public archive site/ERDDAP working
- Next steps include script generation for multi-file downloads and expanding to additional operators

1115 Serving QC solutions: New approaches (Eugene Burger/PMEL) ([slides](#))
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1135 Water Level QC AI (Lindsay Abrams/CO-OPS, James Spore, Hassan Moustahfid/IOOS) ([slides](#))
- Presentation on development of a machine learning-enabled quality control system for water level measurements based on CO-OPS' historic water level data.
- Details of the system to be discussed are training methods (general versus regional models), ML/AI algorithms used, successes in identifying bad data, and discussion on ML/AI approaches to correct the bad data. Any feedback is appreciated.

1155 Lunch

1300 IOOS/NOAA Cloud Sandbox Update (Patrick Tripp/RPS, Tiffany C. Vance/IOOS) ([slides](#))
- Provide an update on the NOAA Cloud Sandbox work.
- Provide an update on current and planned enhancements.

1320 IOOS Sensor Map ERDDAP Integration Status Update (Shane St. Savage/Axiom) ([slides](#))
- Deployment of an instance of the Sandbox within NOAA - successes, challenges, and next steps.

1335 Overview of Breakout Sessions (10 min each)
- Breakout #4: State of ERDDAP
- Breakout #5: Modeling: tools for observational data access/subsetting/aggregation, QA/QC, visualization, validation

1355 Break

1410 Breakout Discussions

Breakout #4: State of ERDDAP Leads: Kevin O'Brien	Session Description: ●	Room: **Spring** Notes: 📄 DMAC 2023 Breakout: State of …
Breakout #5: Modeling: tools for observational data access/subsetting/aggregation, QA/QC, visualization, validation Leads: Saeed Moghimi, George Breyiannis	Session Description: ● Arrange for DMAC and OceanModeling organizations mutual support ● How can DMAC help expanding modeling community developer data retrieval tools?	Room: **Ellsworth** Notes: 📄 DMAC 2023 Breakout: Modelin…

1640 Breakout Report Outs/Daily Wrap/Day 3 Breakout Overviews

1700 Adjourn Day 2

1700 - 1930 PM Happy Hour at [Silver Branch Brewing](#)

8401 Colesville Rd #150, Silver Spring, MD 20910, 10 min walk from SSCB

Thursday, September 28th

Location: Silver Spring Civic Building:
- Ellsworth Room (Breakouts)
- Fenton Room (Breakouts)

0830 Arrival, coffee

0900 Breakout Discussions

Breakout #6: Cloud-native data management, DMAC & Xpublish Leads: Jonathan Joyce, Alex Kerney, Matt Ianucci, Kristen Thyng	Session Description: ● Educate the community on tools and techniques for working with datasets in the cloud ● Demonstrate role of kerchunk in the data preparation process ● Demonstrate how to read and serve a dataset using xpublish	Room: **Ellsworth** Notes: 📄 DMAC 2023 Breakout: Cloud-n…
Breakout #7: IOOS GitHub management and demos Leads: Felipe Fernandes, Mathew Biddle	Session Description: ● Educate the DMAC community about the IOOS GitHub organization. ● Discuss basic community rules and structure and identify where folks can contribute to the conversation. ● Walkthrough of how to use the IOOS Jekyll documentation websites.	Room: **Fenton** Notes: 📄 DMAC 2023 Breakout: IOOS Gi…

1030 Break

1100 Breakout Discussions

Breakout #6: Cloud-native data management, DMAC & Xpublish (cont'd) Leads: Jonathan Joyce, Alex Kerney, Matt Ianucci, Kristen Thyng	Session Description: ● Educate the community on tools and techniques for working with datasets in the cloud ● Demonstrate role of kerchunk in the data preparation process ● Demonstrate how to read	Room: **Ellsworth** Notes: 📄 DMAC 2023 Breakout: Cloud-n…

	and serve a dataset using xpublish	
Breakout #n: Leads:	Session Description: ●	Room: **Fenton**

1200 Lunch

1300 Breakout Discussions

Breakout #6: Cloud-native data management, DMAC & Xpublish (cont'd) Leads: Jonathan Joyce, Alex Kerney, Matt Ianucci, Kristen Thyng	Session Description: ● Educate the community on tools and techniques for working with datasets in the cloud ● Demonstrate role of kerchunk in the data preparation process ● Demonstrate how to read and serve a dataset using xpublish	Room: **Ellsworth** Notes: 📄 DMAC 2023 Breakout: Cloud-n…
Breakout #n: Leads:	Session Description: ●	Room: **Fenton**

1500 Meeting Adjourn