

## September 22 | IOOS DMAC/AI Presentation

### Q&A

- AI goldrush right now in other areas; how serious are companies like Google, Meta will be in the future for partnering, since they are profit-focused?
  - NOAA has some MOUs with these companies
  - These companies doing a lot with NWS and are coming forward with interest in doing similar work with oceans
- Emphasized workforce development concern
  - There are programs within NOAA for mentoring, but need more
- NOAA has pretty strong AI policy/plan, so what can this Committee do to weigh in on this. Is there something this Committee could highlight that is a current blockage to moving this AI work even further?
  - Emphasizing importance of reliable, interoperable data products - IOOS core function. Without observations, AI not possible. Helpful for Committee to make that connection.
- Challenge with AI for organizations is what is the strategic plan/vision. Is it the role of the program office to be setting this plan/vision?
  - Showcase what IOOS is collecting through models
  - Value of data with AI is even more valuable now; will IOOS be doing this modeling, or is it just able emphasizing how data used?
    - IOOS has to do some data processing before it is out there
    - Processing can be done with AI/ML
    - IOOS limited in staff/resource, so may not be our role to build out significant AI-based system
    - Instead, more work to be done in demonstrating use or use cases
- Trying to incentivize good behaviors and not a lot of top down control because of how grant mechanisms set up
  - Do have some more control around [Regional Coastal Observing System certification](#)

### PWG Next Steps

- Interested in model aspect of presentation; difficult to incorporate due to resource limitation; motivation for adding more observations
- Role of IOOS to be data broker; QA/QC well-aligned with NOAA mission; highlights importance of ocean data - to have valid model, need density of observations; translating weather to ocean models difficult; what applications align well with mission/goals of agency might be useful guidance
- Modeling has been important objective of IOOS mission; making sure data collected can be ingested into ocean/weather models via GTS; at the same time, RAs operate their own models for specifically applied uses
- Renewed interest in hearing from NWS (Curtis Marshall)

- Unclear what IOOS AI strategy is and confused about modeling conversation
  - Groups within NOAA doing modeling, how they access data important
  - Very interested in CO-DMAC project and would like to learn more (goals, what data being moved, how related to bigger NOAA AI projects)
  - Difficult to do successful AI on legacy systems
- Interest in hearing more about Cloud Sandbox project
- Underestimate uncertainties with coastal modeling; ecosystem forecasting difficult
  - Interface between IOOS data and how modeling systems use it may be an area for potential recommendations
- If someone goes to ChatGPT and asks about water conditions somewhere, does it say it uses IOOS data?
  - Gets at attribution issue
- Future briefings
  - Cloud Sandbox
  - Modeling
  - CO-DMAC
  - Curtis Marshall - joint with other PWG (how NWS ingesting data from non-NWS sources, working with private sector, role of academia as part of model development)
- Timeline
  - Planning on having informational briefings Oct-Dec
  - Planning on having Admin call end of Oct
  - Draft recommendations by in-person meeting planned for late Jan (or at least something to be shared with full AC to discuss at meeting)
- Focus on one critical area for stakeholders for models (ex. Loop current prediction)
- Emphasized having to have the foundation of observations for AI
  - One RA struggling to make access to data easier due to potential costs
  - Recommendations could emphasize barriers for RAs, such as cost, for RAs to better take advantage of AI

## August 13 | 📅 IOOS AC PWG - AI Readiness

- Purpose of the meeting is to discuss the information briefings needed and the timeline for producing recommendations
- Re-engage with Rob Redmon (who gave previous AI briefing)
- Hear from IOOS Office (Hassan and Micah)
  - Micah is the IOOS data architect looking at data standards and work being done across regions
- After IOOS office briefing, then hear from a few Regional Associations (RAs) to get their perspective
- Data interoperability is important for being AI ready
- National DMAC
  - Examples of national DMAC - Glider DAC, ATN DAC

- Seems like RAs like having some autonomy of their data in having their local/regional DMAC
- For national DMAC, everyone doesn't have to do the same measurements. A few key measurements are done to a particular standard. RAs doing more than that is still ok. Makes it difficult to do pan-IOOS comparison when not all data is the same.
- Physical oceanographic variables generally more standardized
- NOAA Soundscapes program for acoustic data - IOOS is pretty well connected with that effort
- Intersection with IOOS data architecture vs. NOAA data architecture
  - Does IOOS data get to MADIS? Probably not much
  - Briefing from a weather driven office- lessons learned on DMAC
  - National mesonet staff will be very busy over next 6 weeks due to RFP
  - Curtis Marshall - NWS commercial data buys program, including national mesonet program
- Route of IOOS data to NCEI? What data and how does it get there?
  - IOOS works closely with NCEI; built automated pipelines from RAs to NCEI; not 100% of data, but a lot of the data (Micah can discuss)
  - NCEI considered gold standard of data achieving and would be great source of data for training AI
- Is HFR a national DAC? Yes, there is a new HFRNet for this data that very recently migrated from Scripps to NOAA
- Any study of most used IOOS data and value of each data class?
  - NOAA Observing System Council (NOSC) does this for atmospheric data, but unsure if also done with oceanographic data
  - Technology, Planning, and Integration for Observation (TPIO - within NOSC) analyzes observing streams across NOAA and value chain associated with that. But done by topic not program (ex. Coastal resilience, not IOOS program)
  - Need to define what "use" means
  - This could be a little out of scope for this PWG (very big topic)
  - Current IOOS efforts to look at this
    - Ocean Enterprise Study - done every 5 years; done two in past, about to start new one
    - [Benefits of Ocean Observing Catalog](#) (BOOC) - provide use case of ocean observing; being peer reviewed
    - Study by Charlie Coolgen - economic value of ocean observations