



OOI 2.5 Program Update

OOI PMO Report

James Edson

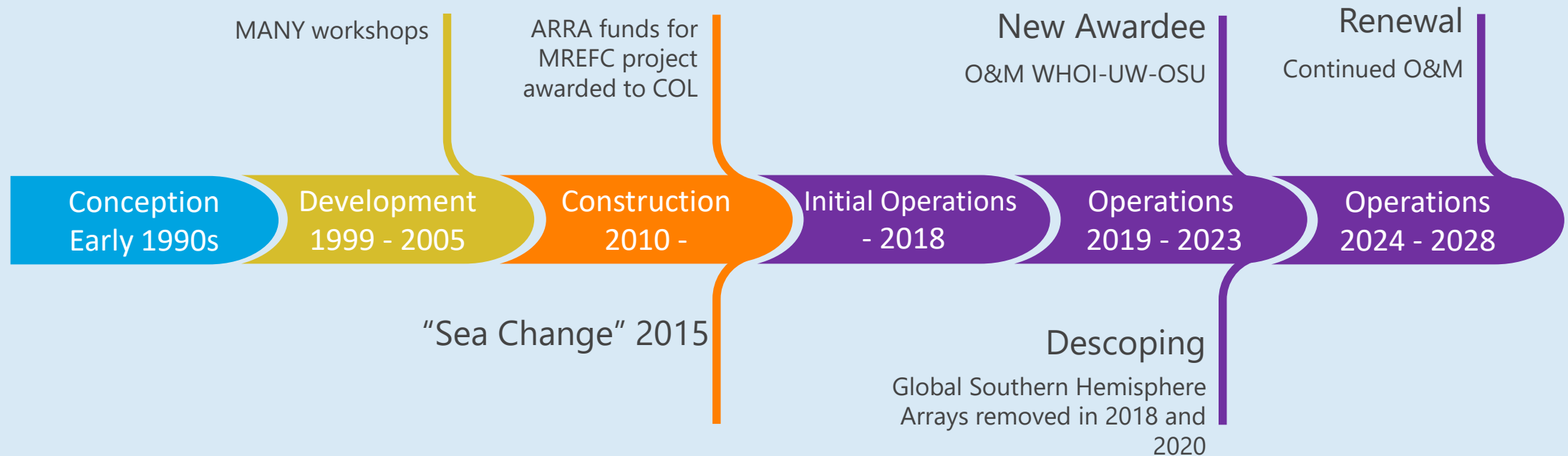
Community Engagement Activities

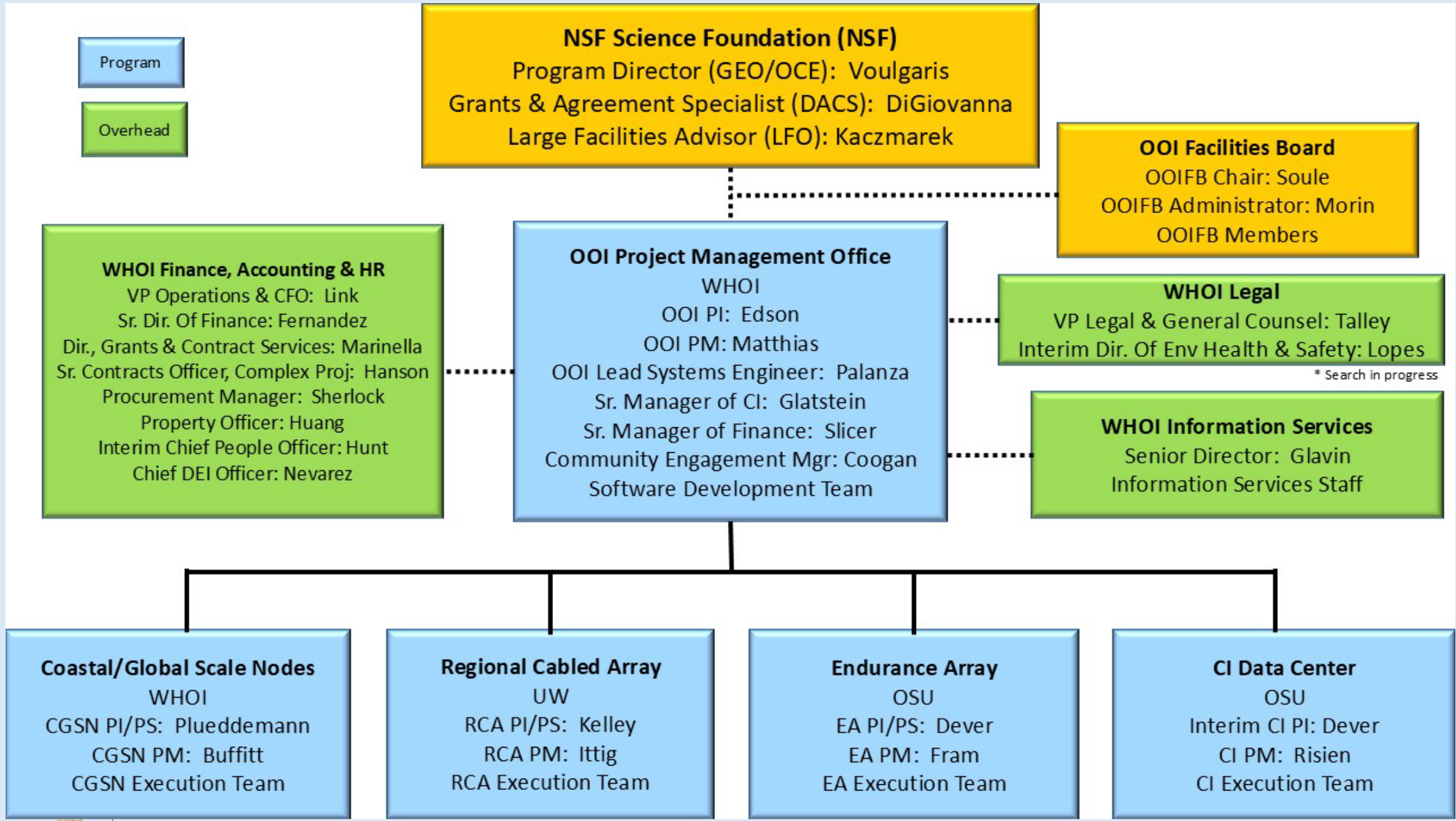
Amber Coogan



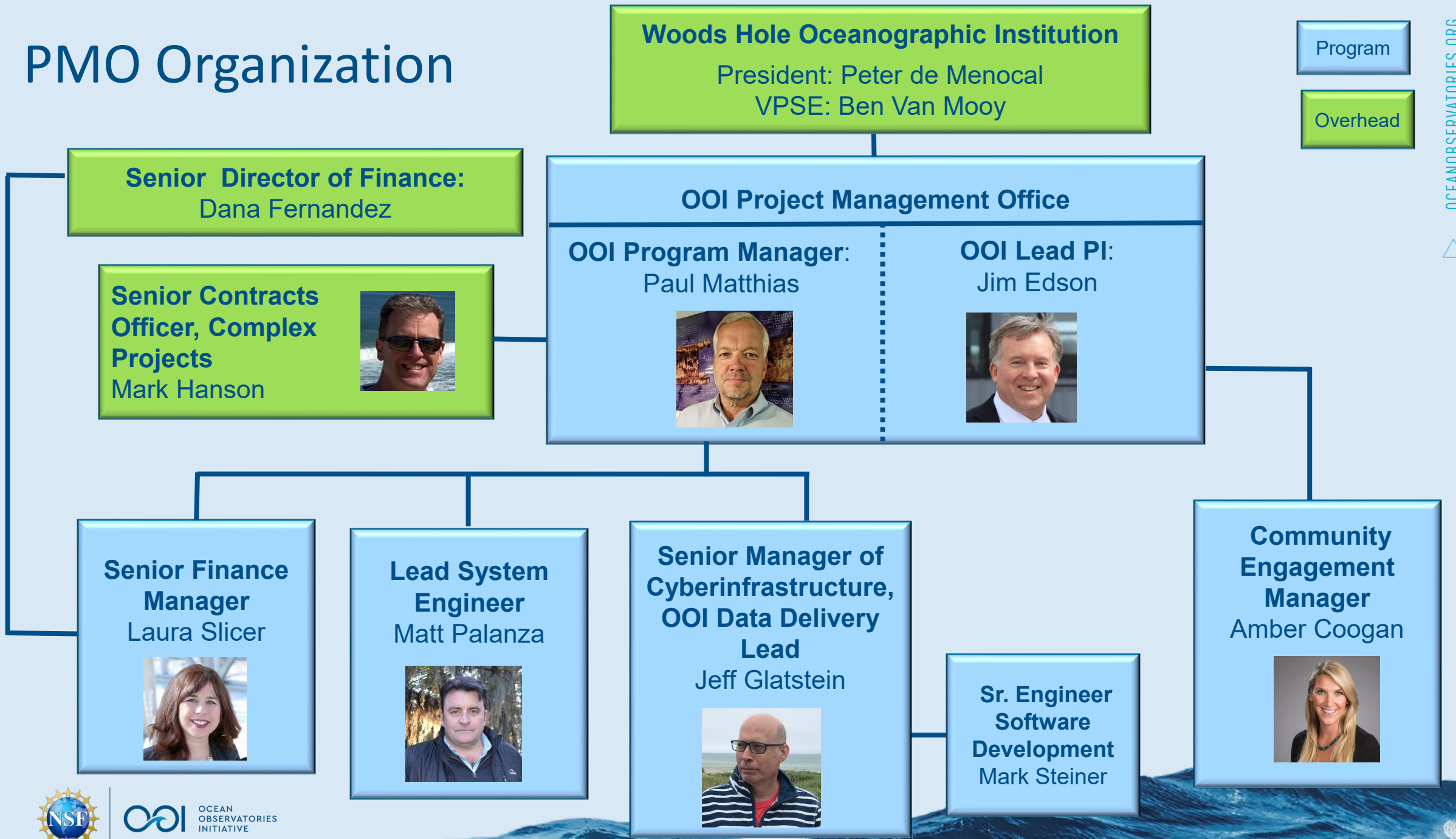


NSF OOI Brief History & Future





PMO Organization

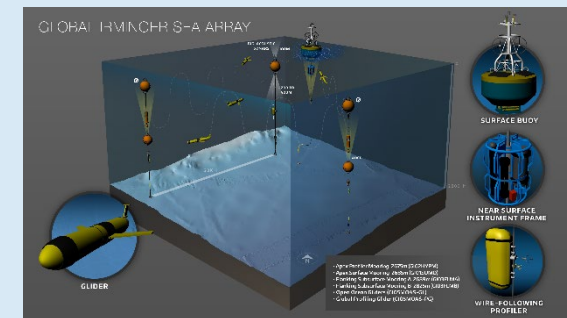
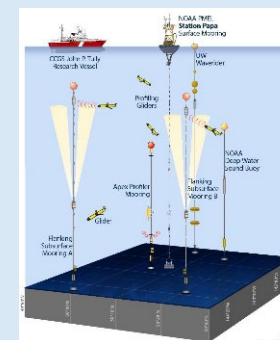


NSF's Ocean Observatories Initiative

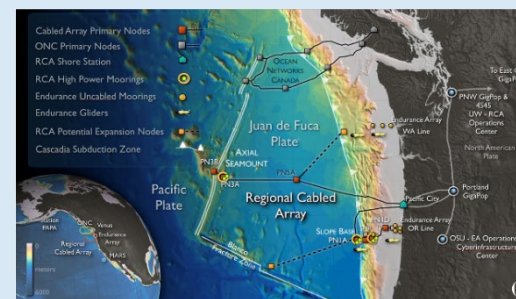
A System of Systems



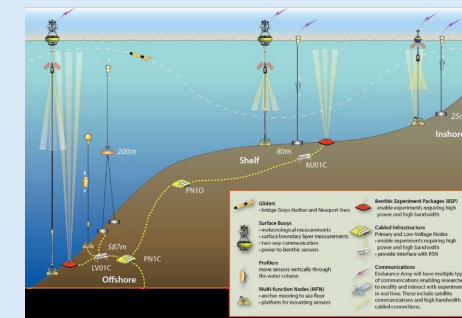
PMEL



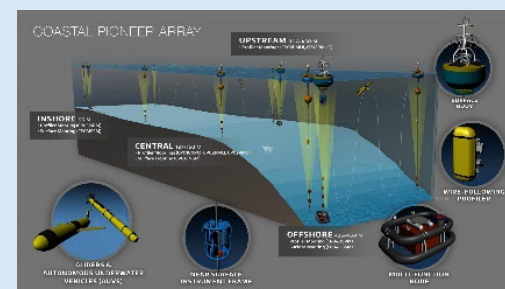
Global Station Papa and Irminger Arrays



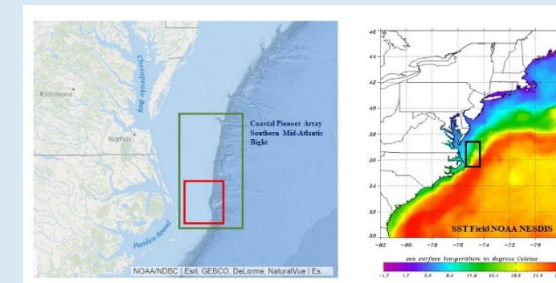
Regional Cabled Array



Coastal Endurance Array



Coastal Pioneer Arrays at NES



Coastal Pioneer Arrays at MAB



NSF's Ocean Observatories Initiative

A System of Systems



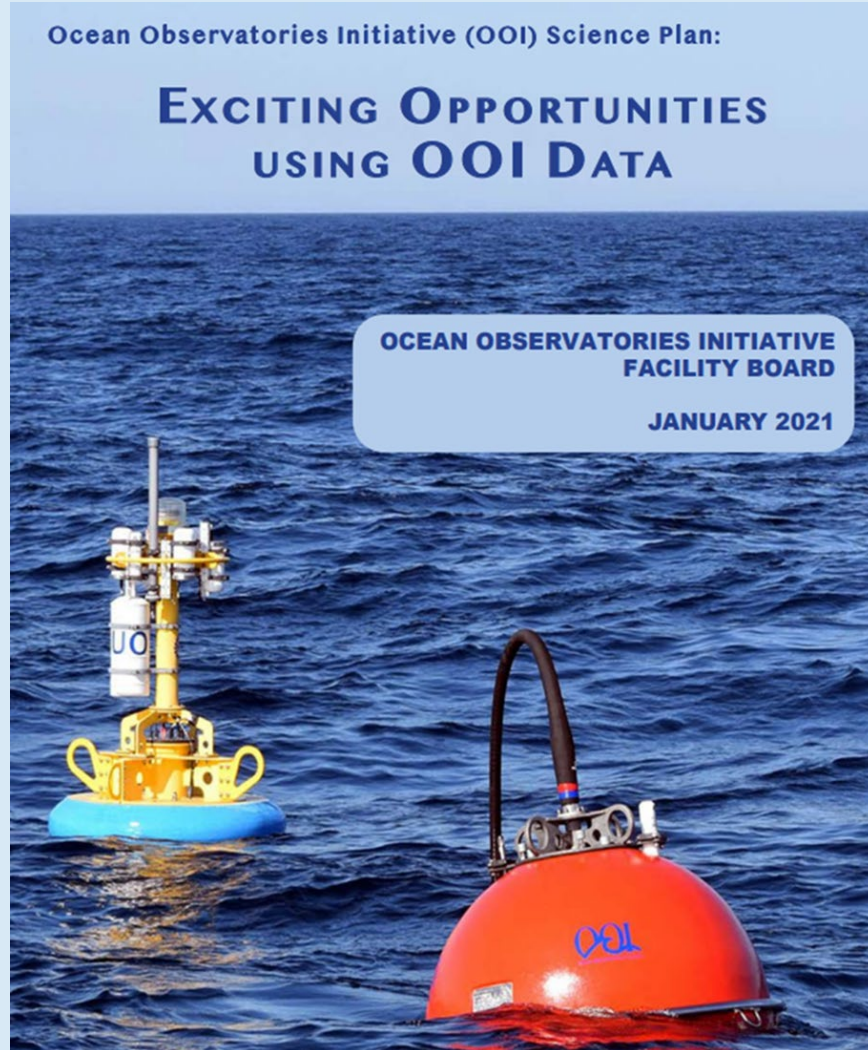
The OOI provides research quality data to the user community. These data are **open access** to researchers, educators, and the public in near real-time at: <https://oceanobservatories.org/>

- OOI operates & maintains sophisticated instrumentation in demanding locations.
- Real-time data from more than 800 instruments on 80 platforms at 5 arrays.
- Served by a united Cyberinfrastructure
- The arrays are designed to conduct science at global, coastal & regional scales.



NSF's Ocean Observatories Initiative

Science Plan



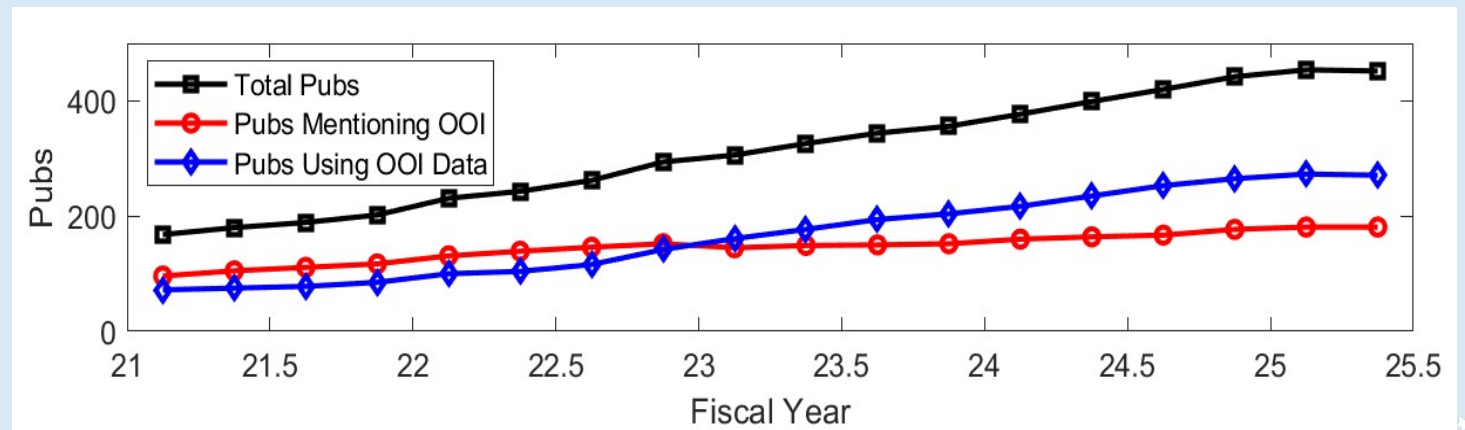
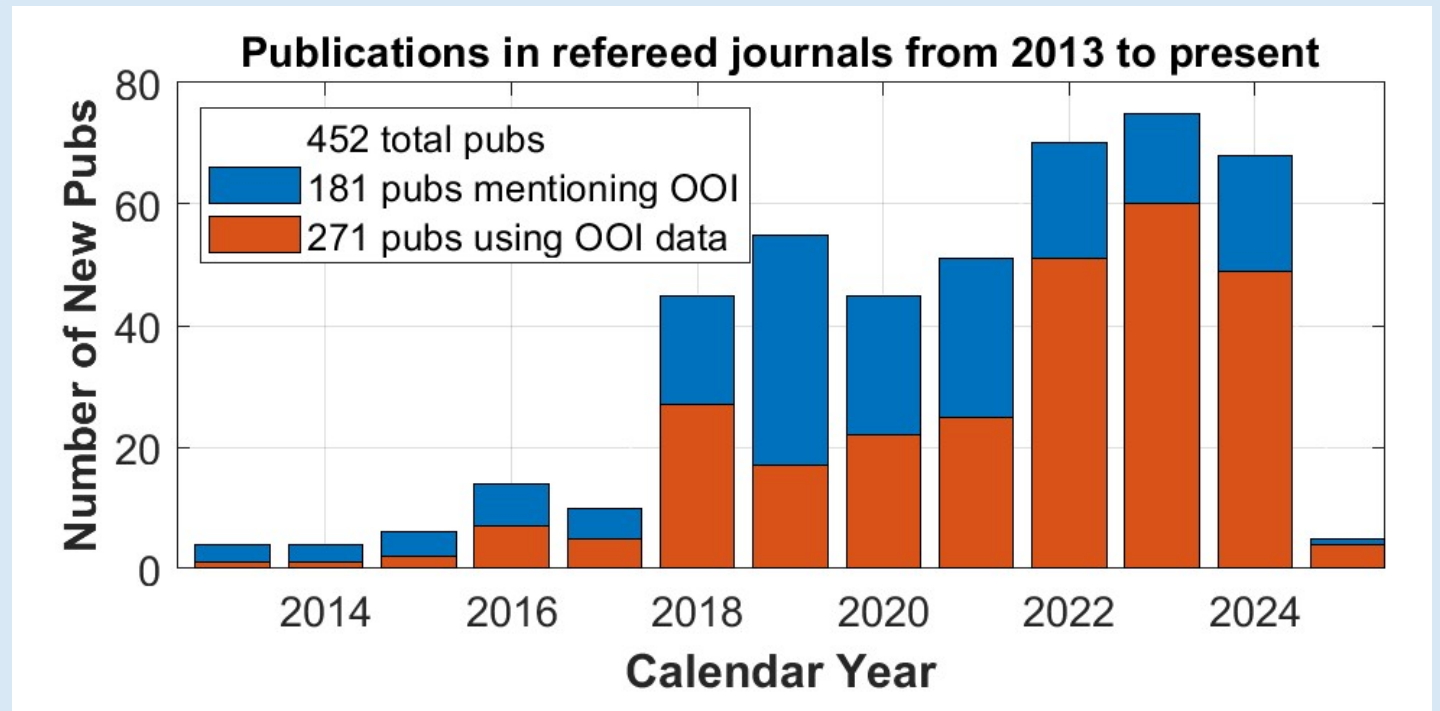
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- Real-time data from more than 800 instruments on 80 platforms at 5 arrays.
- Served by a united Cyberinfrastructure
- The arrays are designed to conduct science at global, coastal & regional scales.
- Six interdisciplinary science themes articulated in the Science Plan:
 - Ocean-Atmosphere Exchange
 - Climate Variability, Ocean Circulation, Ecosystems
 - Turbulent Mixing and Biophysical Interactions
 - Coastal Ocean Dynamics and Ecosystems
 - Fluid-Rock Interactions & Sub-Seafloor Biosphere
 - Plate-scale Geodynamics



Metrics for Success

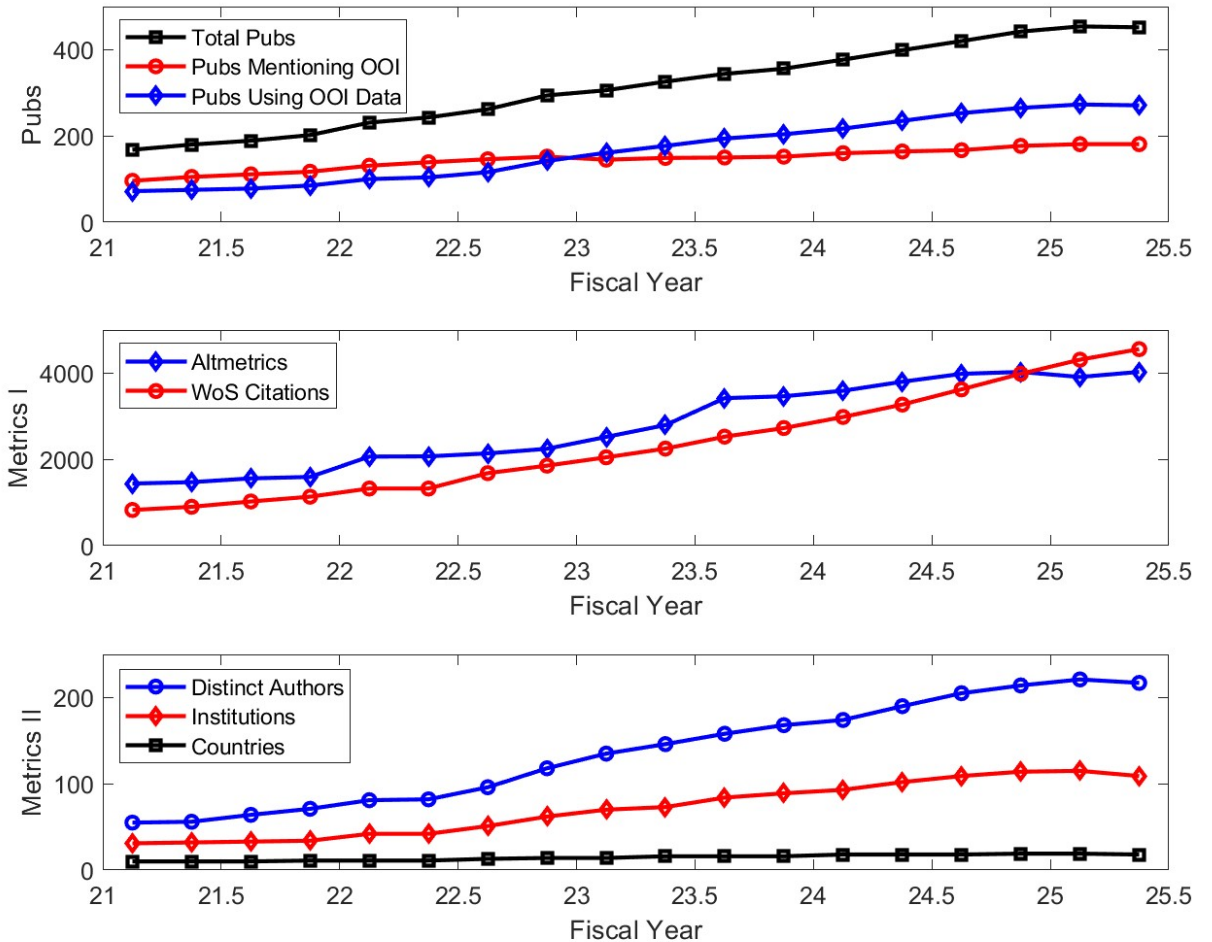
- Thanks to our user community, we have seen steady growth in many metrics including publications and citations
- We have seen steady growth in the use of OOI data, the OOI facility (e.g., the addition of sensors) and our maintenance cruises.
- This has led to a growing list of publications **using** OOI data.



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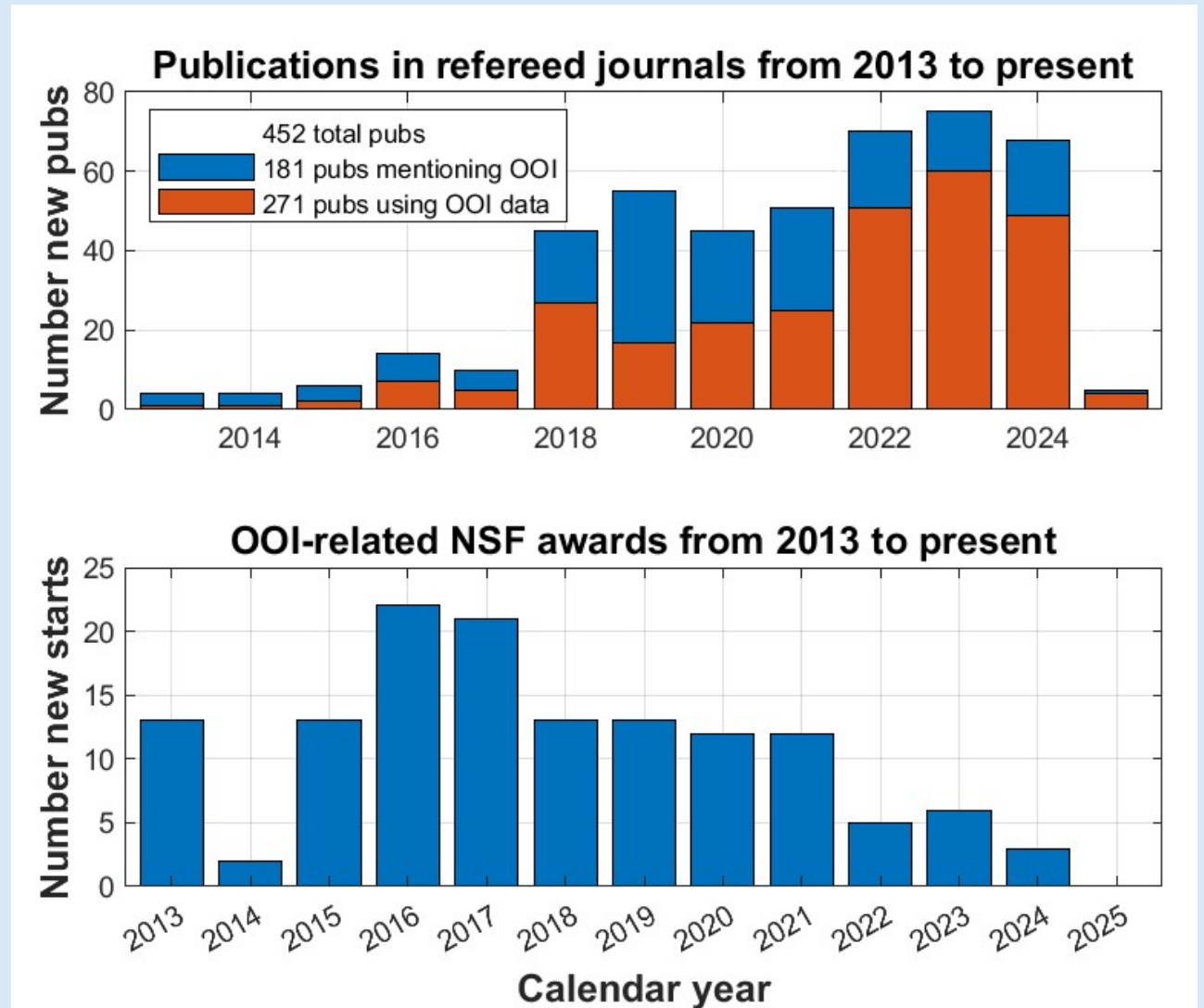
Altmetrics are metrics and qualitative data that are complementary to traditional, citation-based metrics. They can include (but are not limited to) peer reviews, citations on Wikipedia and in public policy documents, discussions on research blogs, mainstream media coverage, bookmarks on reference managers like Mendeley, and mentions on social networks.



Metrics for Success

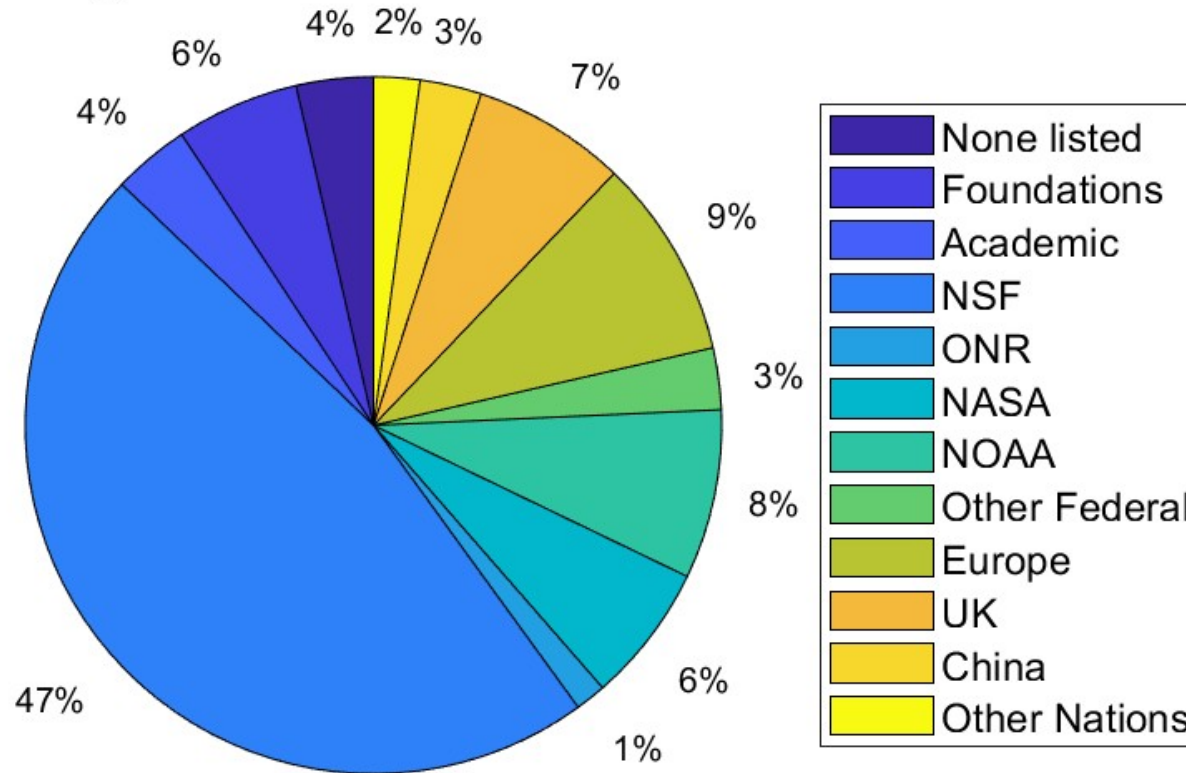
Interestingly, the decreasing NSF awards coincided with rapid growth in publications. We can think of several reasons for this including:

- The freely available OOI data that can be used directly for research without a dedicated NSF (or other) award.
- The healthy amount of early support for research and the vastly improved OOI infrastructure and cyber infrastructure has led to a significant number of publications in recent years. It stands to reason that this is to be expected, as publications typically lag the funding by 2-4 years.
- The use of NSF funding to analyze and publish OOI data from awards that do not include “Ocean Observatories Initiative” in the submitted proposal.
- The use of other funding sources to analyze and publish OOI data.

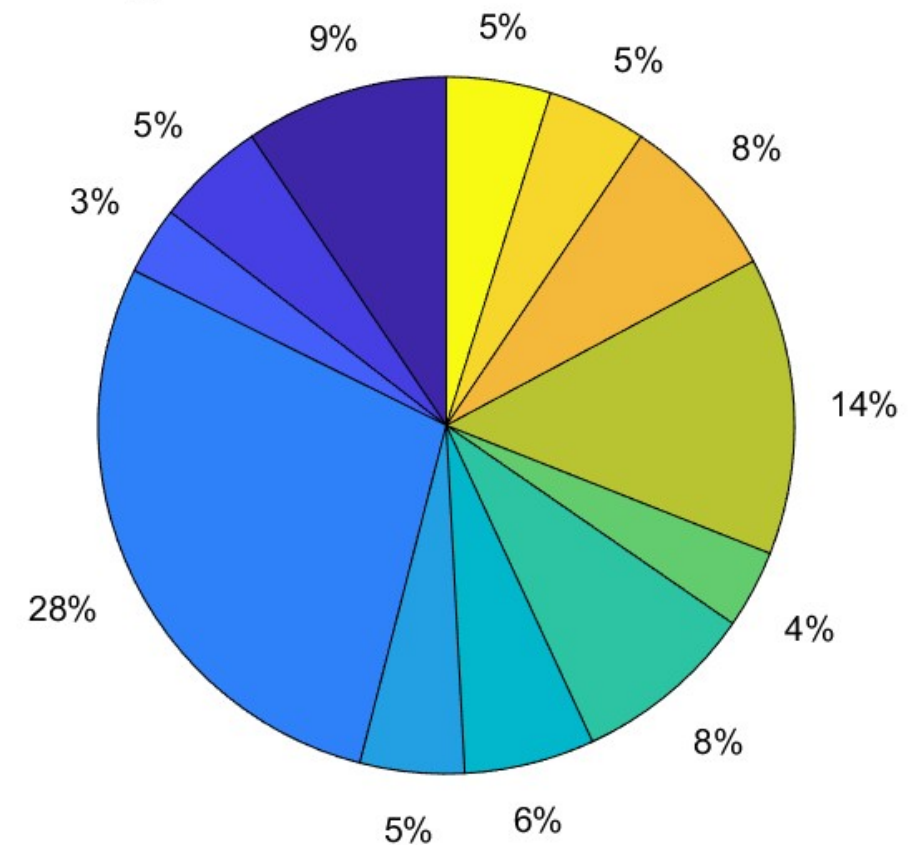


Metrics for Success

Funding Sources 2013-2019 N=140



Funding Sources 2020-Present N=413



NSF's Ocean Observatories Initiative

Summary



- OOI has really hit its stride, delivering high quality data from multiple arrays for a decade.
- The OOI is meeting and exceeding the expectations as originally envisioned for OOI 2.0 and are on track to meet all our deliverables in PYVII (FY25) for OOI 2.5.
- Most importantly, the well-managed OOI is delivering on its promise to deliver high-quality, quality controlled, interdisciplinary oceanographic data to the scientific community.
- The also allows us to work across the board to improve the data we serve through improved QA/QC (e.g., automated QA, HITL, deep dives), interaction with vendors, tech refresh, PI and new sensors, instrument testing, and community engagement.
- Our current mission is to complete our cruises in Q4 and maintain our staff.
- However, we need information about our budgetary situation from NSF as soon as possible.

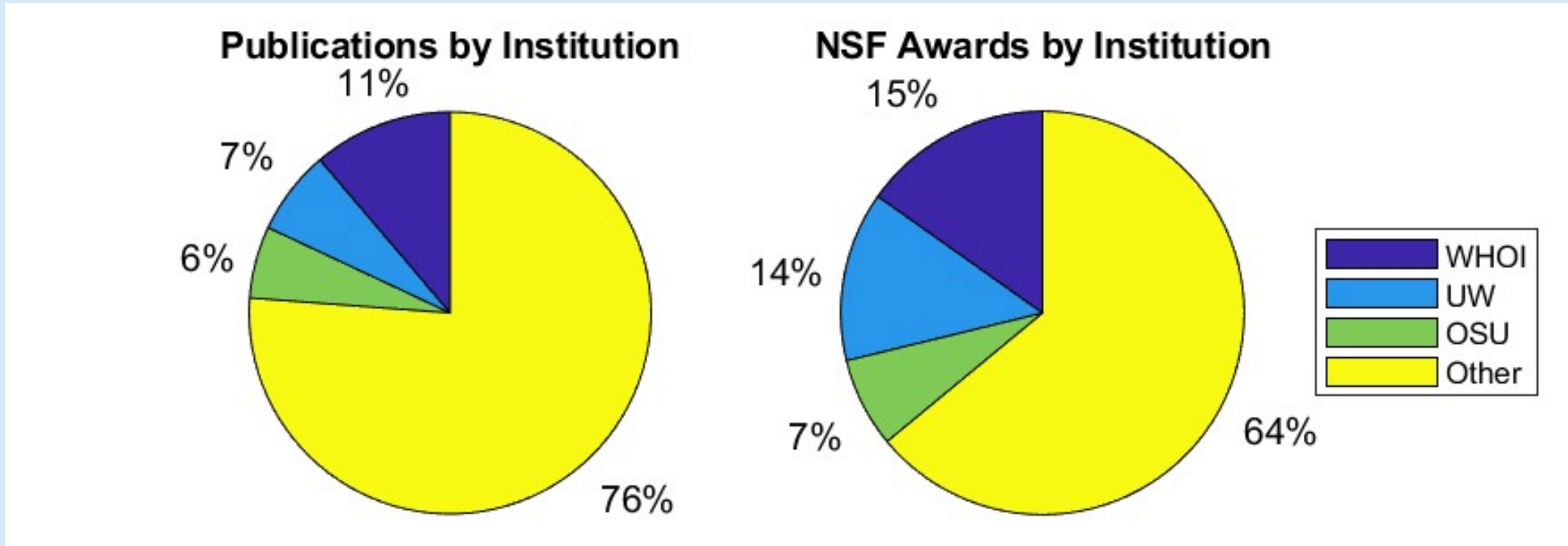
Questions?



OCEAN
OBSERVATORIES
INITIATIVE



Publications & NSF Starts by Institution

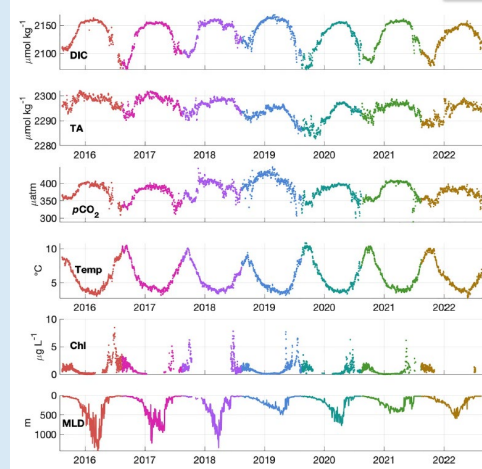


- The OOI doesn't conduct research, it provides research quality data to an ever-expanding user base.
- NSF funding is going to a wide range of universities, colleges, and research institutions.
- The OOI infrastructure has supported research by numerous PIs using diverse funding sources.



Democratization of Data

The OOI provides research quality data to the user community. These data are **open access** to researchers, educators, and the public in near real-time at: <https://oceanobservatories.org/>



Yoder, M. F., Palevsky, H. I., & Fogaren, K. E. (2024). Net community production and inorganic carbon cycling in the central Irminger Sea. *J. Geophys. Res.*, 129, e2024JC021027. <https://doi.org/10.1029/2024JC021027>

SUGR meeting at the Fall AGU meeting Advancing Ocean Carbon Science
Sunday December 8th from 11am to 2pm.

Palevsky, H. and 23 co-authors, (2023). OOI Biogeochemical Sensor Data: Best Practices & User Guide Global Ocean Observing System, 1(1.1), 1–135.
<https://doi.org/10.25607/OBP-1865.2> **GOOS ENDORSED PRACTICE**



ECV Collected

Surface Variables

- Pressure
- Radiative Fluxes
- Temperature
- Humidity
- Precipitation
- Moisture/Evaporation
- Vector Wind
- DC Stress & Buoyancy Flux

Oceanographic

- Net Surface Heat Flux
- Temperature Profiles
- Salinity Profiles
- Currents Profiles
- Sea Level
- Sound
- Turbidity

Biogeochemical Sensors (at multiple depths)

- pH
- pCO₂
- Oxygen
- Plankton & zooplankton
- Nitrate
- Chlorophyll-a
- CDOM
- Ship Surveys (DIC, TA)

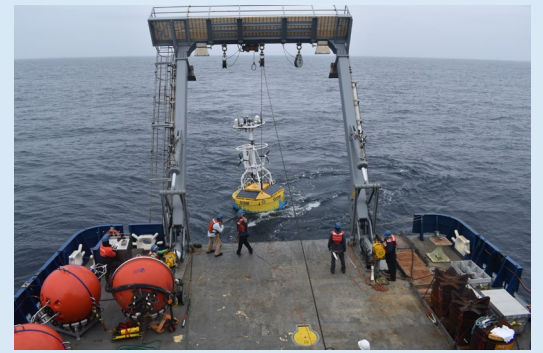


Program Enhancements for Observatory-Based Research

- **Tech Refresh:** Replace aging infrastructure, new data center for CI, improved technology upgrades, and some new sensors.
- **Additional Data Specialist Support:** Much needed help with our ongoing QA/CC efforts and generation of curated data sets for the research and educational communities.
- **Associate Project Scientists:** The next generation of OOI project scientists.
- **Data Ambassador Program:** OOI-led teams connecting experienced ocean data users with the broader community to improve data accessibility and usability
- **Community Ambassador Program:** Colleagues serving as OOI data champions as part of the DA program.
- **Science User Groups for Research (SUGR) Meetings:** Designed to facilitate direct feedback from the community to improve OOI services. This collaborative approach ensures that OOI remains responsive to user needs.

Michael Vardaro, Research Scientist at UW/RCA, will provide demonstrations on how to access OOI data using our Data Explorer tool at the OOI Booth as a **Data Ambassador**.

Our first SUGR meeting was held at the Fall AGU meeting entitled **Advancing Ocean Carbon Science** was held this past Sunday.



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