International GO-SHIP, rooted in multiple decades of ocean measurements, and Biogeochemical Argo, which is newly developing and will reach full global coverage by 2025, provide the bulk of highly accurate carbon, oxygen, and nutrient information for the global ocean, and which are necessary for understanding and quantifying the distributions and changes of BGC properties in the open ocean.

While U.S. GO-SHIP will likely continue with its current mode of 6-year proposals to NSF and NOAA, after 2025, the U.S. contribution to the global array of 500 BGC Argo floats will collapse unless a source of funding is found, and the exponentially growing use of these data will face a decline to nearly zero over the subsequent 3 to 6 years as the deployed floats reach the end of their lifetimes.

**GO-SHIP, OneArgo, GO-BGC and SOCCOM: Status and Contributions to the Global Ocean Observing System**

Pathways Connecting Climate Changes to the Deep Ocean Workshop
April 23-25, 2024 Lewes, DE
On Behalf of the U.S. GO-SHIP Executive Council, and the GO-BGC and SOCCOM Executive Committees
Lynne Talley, Scripps Institution of Oceanography, UCSD, La Jolla CA
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GO-SHIP
SUSTAINED, DECADEAL, GLOBAL SHIPBOARD OBS. - GO-SHIP

Satellite measurements
Ship-based surface measurements

Open ocean below the sea surface
- Profiling Floats
- Research Ships
- Fixed locations

‘You can’t manage what you don’t measure.’

**PROGRAMS**

**GO-SHIP**
SUSTAINED, DECADEAL, GLOBAL SHIPBOARD OBS. - GO-SHIP

**OneArgo**
SUSTAINED, FREGUENT OBSERVATIONS FOR HEAT AND SALINITY

**GO-BGC**
SUSTAINED, FREGUENT OBSERVATIONS FOR CARBON, OXYGEN, ECOSYSTEM

**SOCCOM**
SUSTAINED, FREGUENT OBSERVATIONS FOR HEAT AND SALINITY

**Somes Uses and Results**

**Ocean Heat Uptake**
The ocean takes up 96% of the extra heat.

We know this location of Argos TSO observations & SOCCOM: Data record
Argo TSO is essential for climate assessment.

**Ocean Carbon Uptake**
The ocean takes up 24% of the extra CO2 in the atmosphere.

**Oxygen Variability from OneArgo and GO-SHIP**
We can also estimate the ocean oxygen distribution from Argos.

**BGC-ARGO Extends Satellite Observations into the Interior**
Merging float profiles of POC with high-resolution satellite observable

**Status & Future**

Current NOAA budget is insufficient to support Core-Argo, and that array is in decline. But GO-SHIP funding ENDS in 2025. No continuation funding has been identified as of now.

But GO-BGC funding ENDS in 2025. No continuation funding has been identified as of now.

SOCCOM has ended. Continuation is under consideration.

Include the data in projects proposed to NSF, NOAA, NMFS, DOE, NASA, etc.

NSF: proposal pressure is essential, as the data are necessary to understand ocean health and predict future changes.

BGC-Argo defines MVR background variability for mCDR