US Biogeochemical-Argo Subcommittee

An OCB topical subcommittee focused on Biogeochemical-Argo

Objective: This committee will serve as a focal point for US community input on the implementation of the global biogeochemical float array and associated science program development. This committee will also engage with and provide US input to the International Biogeochemical-Argo steering committee.

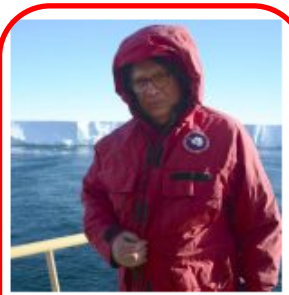
Emmanuel Boss

Brendan Carter

Scott Doney

Matt Mazloff

Melissa Omond



Steve Riser

John Dunne

Steve Emerson

Meg Estapa

Joellen Russell

Jorge Sarmiento

Megan Scanderbeg

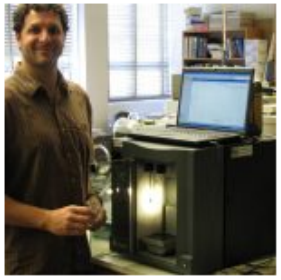
Alison Gray

Cara Wilson

Todd Martz

Yui Takeshita

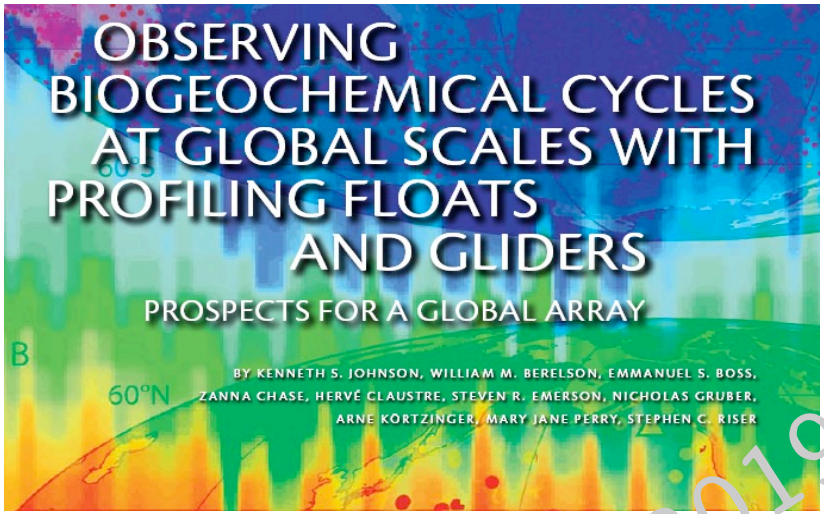
Lynne Talley



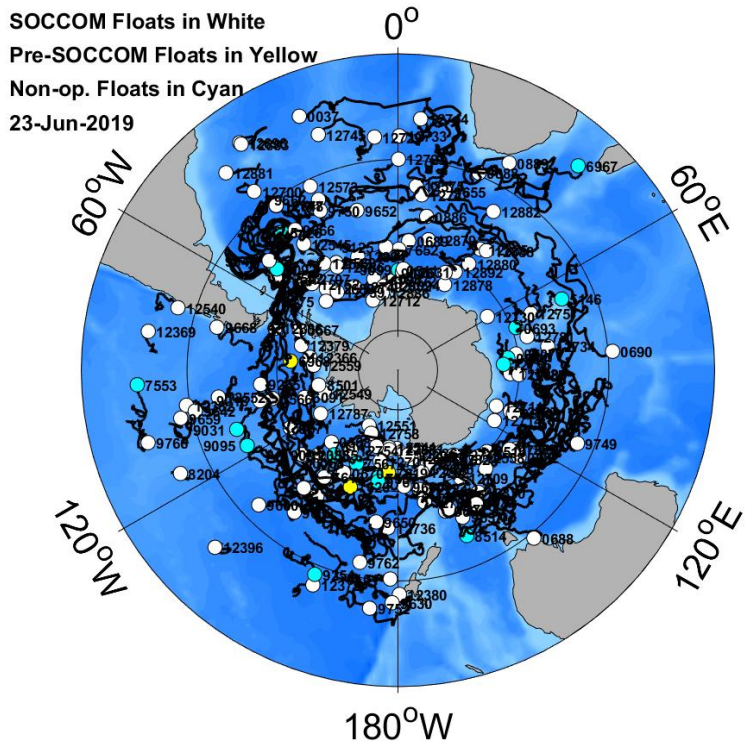
Toby Westberry

US Ocean Carbon & Biogeochemistry Scoping Workshop

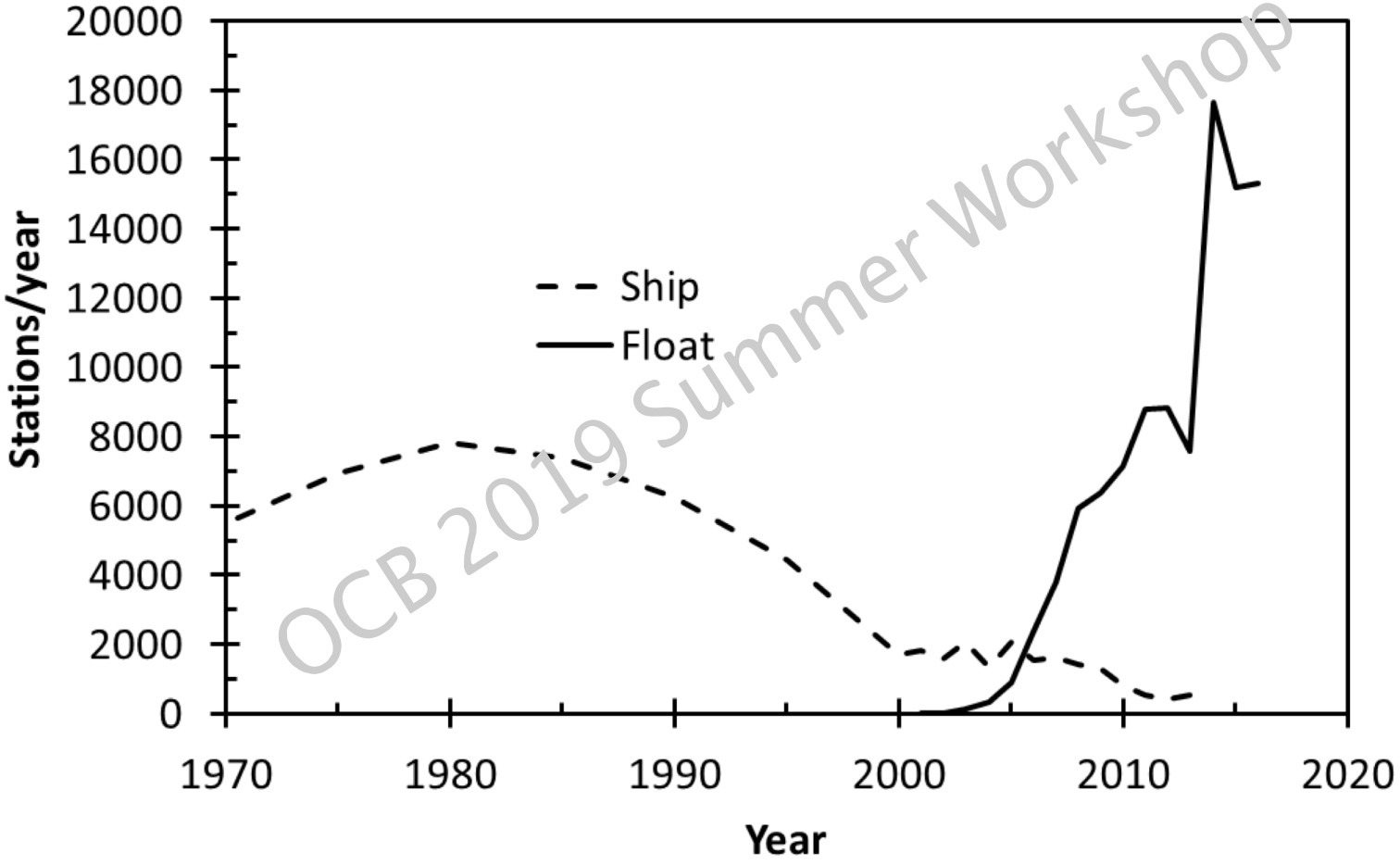
28-30 April 2009, Moss Landing, USA



SOCCOM



Oxygen profiles to Z>900 m (thru OMZ) from ships (World Ocean Atlas 2013) and floats (Argo GDAC)



Journal of Geophysical Research: Oceans

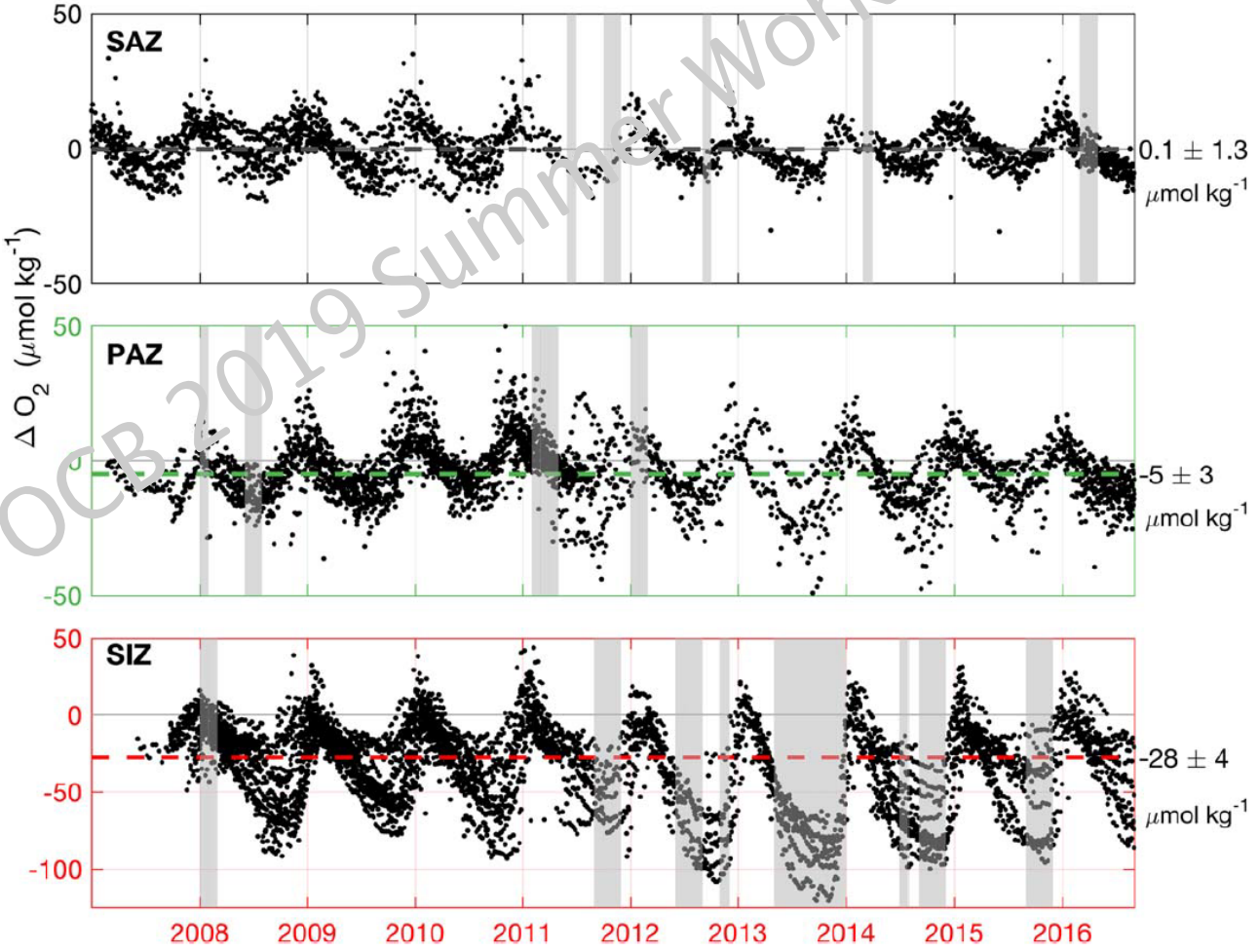
RESEARCH ARTICLE

10.1002/2017JC012923

Special Section:

Oxygen in the Southern Ocean From Argo Floats: Determination of Processes Driving Air-Sea Fluxes

Seth M. Bushinsky[1], Alison R. Gray[1,2], Kenneth S. Johnson[3], and Jorge L. Sarmiento[1]



The Biogeochemical-Argo Implementation Plan (2016)

- An international plan
- 1000 profiling floats with O_2, pH, NO_3^-, bio-optics
- Observe seasonal and interannual change in carbon cycling, OMZ's, nutrient flux, acidification, biological carbon pump, phytoplankton phenology
- Ocean management of living marine resources & carbon budget verification
- Sustaining 1000 floats requires ~250 floats/year
- US does half the array

http://biogeochemical-argo.org

Mid-scale Research Infrastructure-2 (Mid-scale RI-2)

Announced,	Dec. 2018
Pre-proposals,	Mar. 2019
Down select,	May 2019
Final proposals,	Aug 2019

PROGRAM SOLICITATION
NSF 19-542

National Science Foundation

Individual awards from $20 million to $70 million are anticipated
Duration of the award may be up to five (5) years.

The Mid-scale RI-2 program will NOT support proposals that include the following:

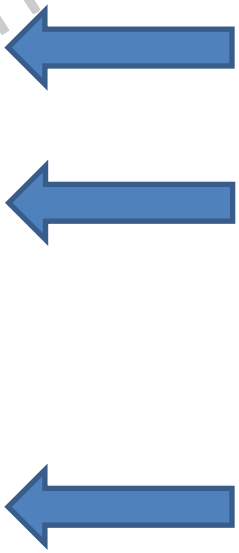
- Pre-implementation research and development and other community or tech
- Science research (except for validation of operational capability);
- Post-implementation research, operations, and maintenance; and
- General-purpose support systems and equipment that are not directly requir of the proposed infrastructure.

Mid-scale RI-2 Consortium: Biogeochemical-Argo: A global robotic network to observe changing ocean chemistry and biology

- A pre-proposal to US NSF Mid-scale Research Infrastructure-2 solicitation
- Consortium of
  - MBARI – Johnson, PI
  - Univ. of Washington – Riser, PI
  - Scripps Institution of Oceanogr. – Talley, PI
  - Woods Hole Oceanographic Inst. – Wijffels, PI
  - Princeton Univ. – Sarmiento, PI
- 500 APEX, Navis, SOLO-II/S2A floats with O_2, NO_3, pH, bio-optics.
- $49,400,000 over 5 years
- One of 13 pre-proposals selected to submit full proposal

biogeochemical Argo

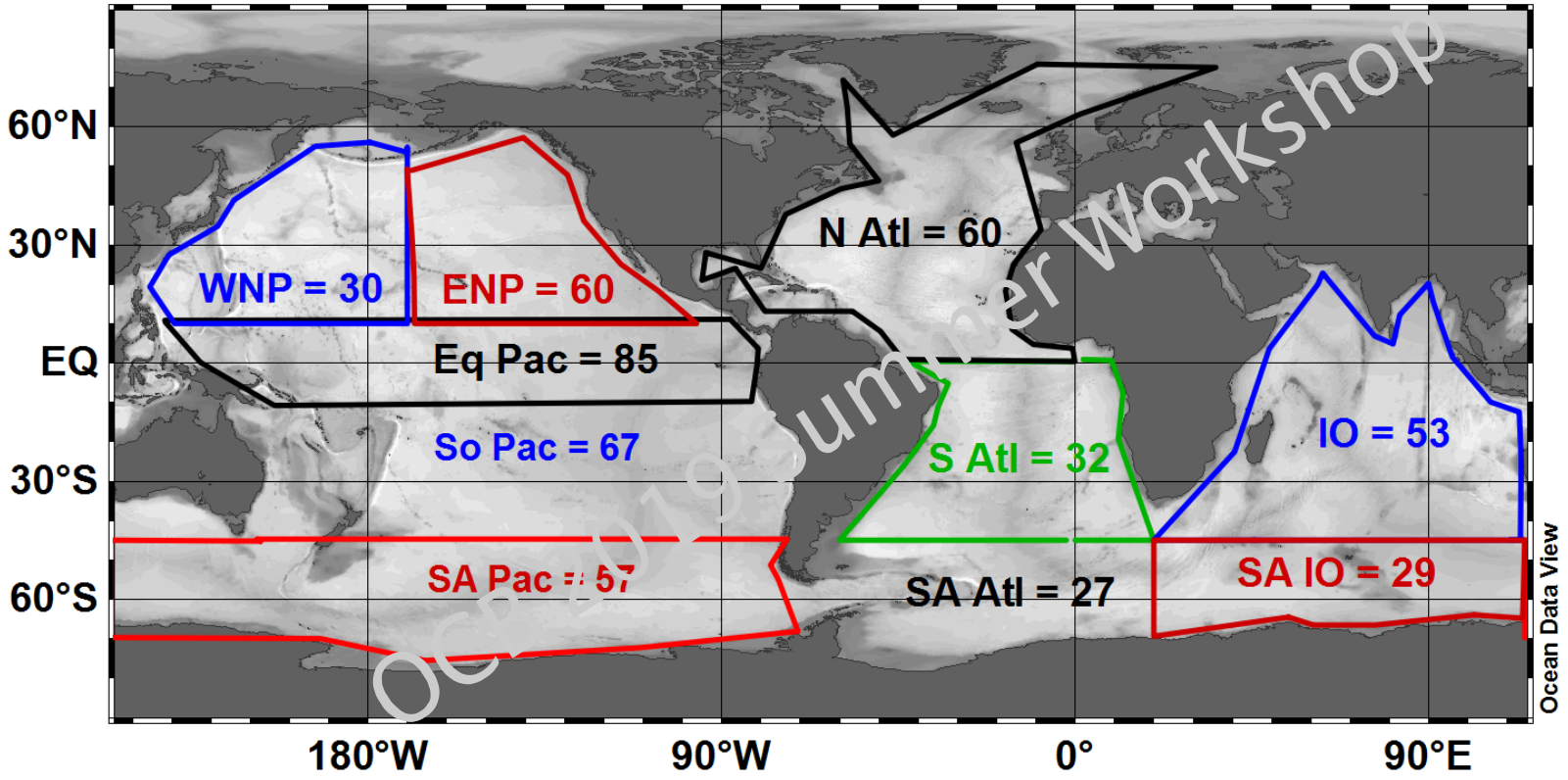
MSRI senior personnel and institution (NSF limits proposal to 5 PI's)	
Heidi Cullen	MBARI
Andrea Fassbender	MBARI
George Matsumoto	MBARI
Yui Takeshita	MBARI
Alison Gray	UW
Todd Martz	SIO
Sarah Purkey	SIO
Roo Nicholson	WHOI



All data will be freely available in real time

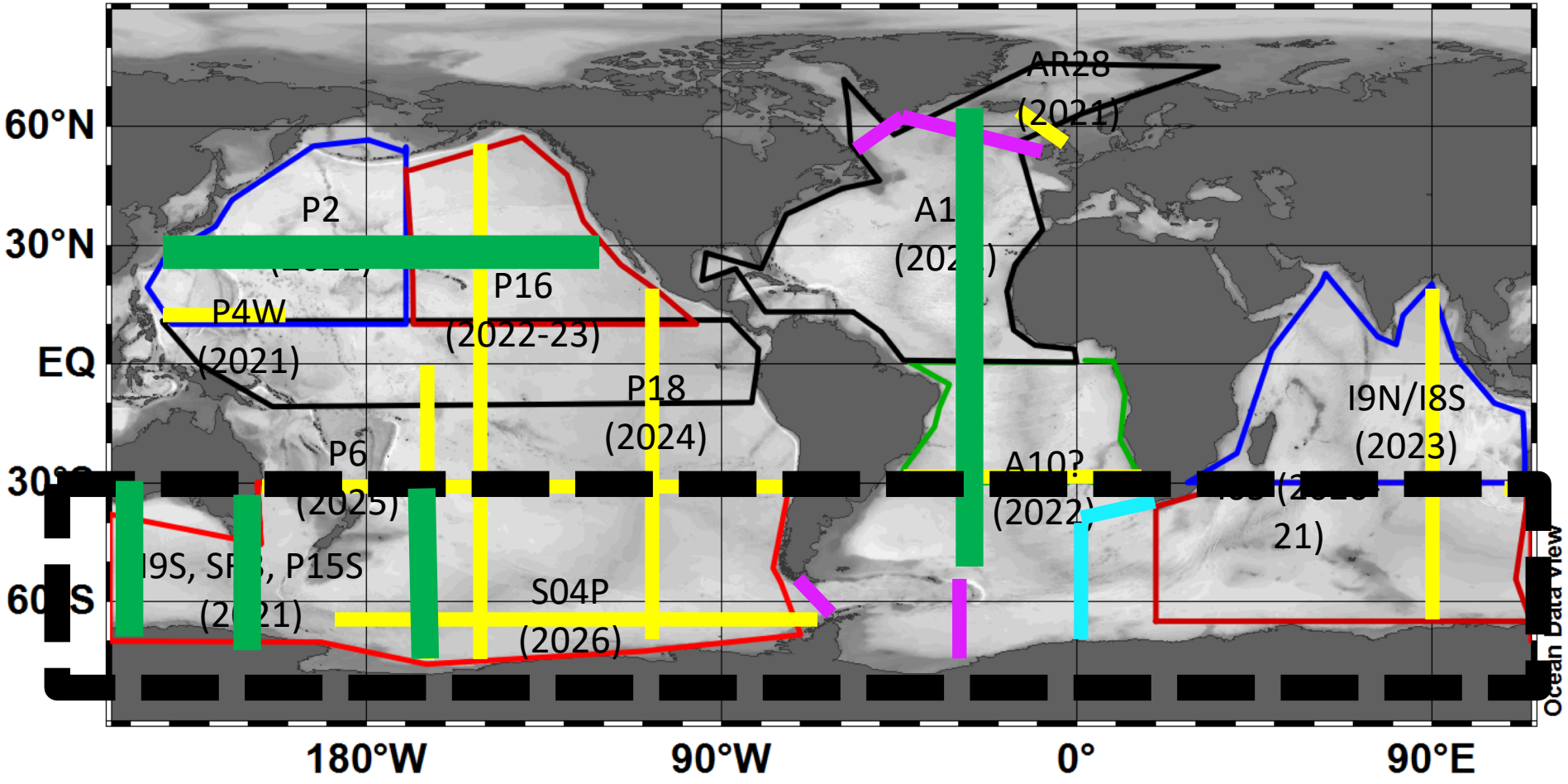
biogeochemical Argo

The US BGC Argo pre-proposal was invited to submit a full proposal. One of 13 projects spanning all of NSF. Perhaps 6 awards.



Inst.	Type	Year 1	Year 2	Year 3	Year 4	Year 5
UW	APEX	40	40	40	40	40
UW	Navis	7	25	25	25	25
WHOI	Navis	10	15	25	30	30
SIO	SOLO	3	5	15	30	30
		60	85	105	125	125

Year 1 – 15 on A16, 15 on P2, 30 So. Ocn.



All data will be freely available in real time

How can the US OCB community help and participate?

1) If the proposal is successful, be prepared to write proposals to use the data stream (write proposals now to use the existing BGC-Argo data stream).

2) Provide input to committee members regarding deployment options/opportunities/priorities.

3) Comments to the committee regarding community oversight.

There will be a lunch gathering Wed. for community input.