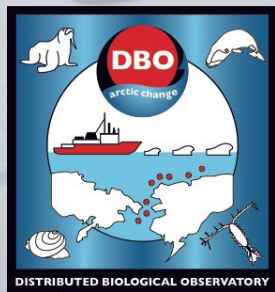


# Pacific Arctic Group National and International Cruises in 2024

**Jackie M. Grebmeier and Christina Goethel**

Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science, Solomons, United States

Forum of Arctic Research Operators (FARO) Annual Meeting  
Arctic Science Summit Week  
Edinburgh, Scotland  
March 21, 2024





**ASSW24 Pacific Arctic Group Spring Meeting**  
**March 24, 2024 (Sunday); 0830-1730 GMT**  
**Location:** Pollock Room, Pollock Estate of the  
University of Edinburgh, Scotland



- The Pacific Arctic Group (PAG) is a group of institutes and individuals having a Pacific perspective on Arctic science. Organized under the International Arctic Science Committee (IASC), the PAG has as its mission to serve as a Pacific Arctic regional partnership to plan, coordinate, and collaborate on science activities of mutual interest.
- For the purpose, we have Spring and Fall meetings
  - **The Spring PAG meeting** is held during “Arctic Science Summit Week” and is focused on “business” issues and an update on research plans for the coming field season.
  - **The Fall PAG meeting** is hosted at various locations in alternating PAG countries after the field season and is focused on review of accomplishments during the previous summer and outlooks for the future.

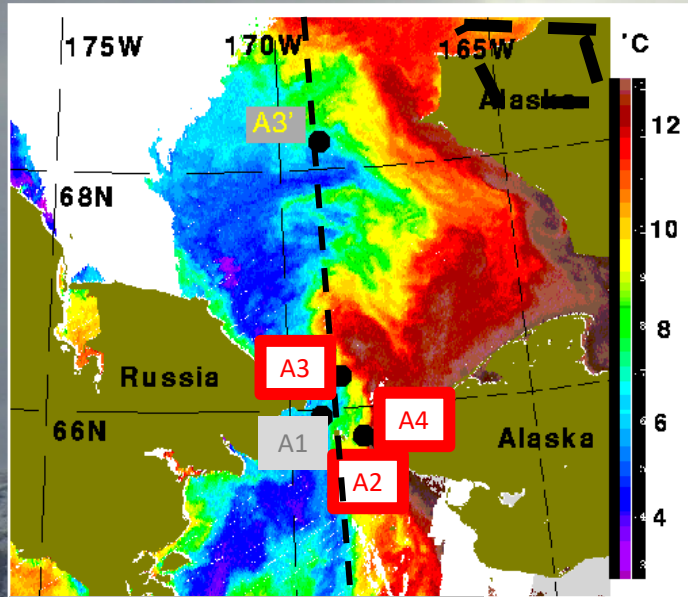
# 2024 PAG and DBO Cruise Plan Table (03-20-24)

**2024 PAG and DBO Field Season (version 3\_20\_24): Sampling Contributors. Projects Key:** AON=Arctic Observing Network; ArCS II=Arctic Challenge for Sustainability (JAMSTEC=Japan Agency for Marine-Earth Ocience and Technology); AMOS=Arctic Mobile Observing System; C3O=Canada's Three Oceans (DFO=Department of Fisheries and Oceans Canada); DBO=Distributed Biological Observatory; EcoFOCI=Ecosystem & Fisheries Oceanography Coordinated Investigations; JOIS=Joint Ocean Ice Study/BGOS = Beaufort Gyre Observatory System (DFO); K-AWARE (KOPRI)=Korea- Arctic ocean WARming & Ecosystem study (Korea Polar Research Institute).

**DBO Region Key:** DBO1=So. St. Lawrence Island, DBO2=Chirikov Basin, DBO3=So Chukchi Sea, DBO4=NE Chukchi Sea, DBO5=Barrow Canyon, DBO6=East Beaufort Sea, DBO7=Beaufort Sea Central, DBO8=Bathurst polynya region.

Dates 2024 (Port calls)	Ship	DBO Region	Projects	PAG contact	Chief Scientist
July 7-Aug 21 (Incheon-Incheon, Korea)	Araon	3, Chukchi Borderland	K-AWARE (KOPRI)	Eun Jin Yang <a href="mailto:ejyang@kopri.re.kr">ejyang@kopri.re.kr</a>	Eun Jin Yang <a href="mailto:ejyang@kopri.re.kr">ejyang@kopri.re.kr</a>
July 7-17 (Homer-Homer)	Norseman II	3; moorings; CTDs	Bering Strait Mooring Project (AON/NSF)	Rebecca Woodgate <a href="mailto:woodgate@uw.edu">woodgate@uw.edu</a>	Rebecca Woodgate <a href="mailto:woodgate@uw.edu">woodgate@uw.edu</a>
Aug 1-13 (Nome-Utqiagvik)	Sir Wilfrid Laurier	1,2,3,4,5	DBO/C3O (AON/NSF)	Jackie Grebmeier <a href="mailto:jgrebmei@umces.edu">jgrebmei@umces.edu</a>	John Nelson <a href="mailto:John.Nelson@dfo-mpo.gc.ca">John.Nelson@dfo-mpo.gc.ca</a>
Aug 7-27 (Nome-Nome)	Sikuliaq	1,2,3,4,5	DBO-EcoFOCI-AMBON-CEO	Jackie Grebmeier <a href="mailto:jgrebmei@umces.edu">jgrebmei@umces.edu</a>	Seth Danielson <a href="mailto:sldanielson@alaska.edu">sldanielson@alaska.edu</a>
Aug 12-31 (Utqiagvik-Utqiagvik)	Annika Marie	5 or near	Bio-physical drivers of bowhead whales	Carin Ashjian <a href="mailto:cashjian@whoi.edu">cashjian@whoi.edu</a>	Carin Ashjian <a href="mailto:cashjian@whoi.edu">cashjian@whoi.edu</a>
Aug 25-Oct 4 (Shimizu-Shimizu, Japan)	Mirai	3,5	ArCS II (JAMSTEC)	Shigeto Nishino <a href="mailto:nishinos@jamstec.go.jp">nishinos@jamstec.go.jp</a>	Amame Fujiwara <a href="mailto:amane@jamstec.go.jp">amane@jamstec.go.jp</a>
Aug 29-Sept 27 (Nome-Nome)	Sikuliaq	-	AMOS (ONR)	Craig Lee <a href="mailto:craig@apl.washington.edu">craig@apl.washington.edu</a>	Craig Lee <a href="mailto:craig@apl.washington.edu">craig@apl.washington.edu</a>
~Sept 15-Oct 11 (Kugluktuk, Canada-return)	Louis S. St-Laurent	-	JOIS/BGOS (DFO/NSF)	<a href="mailto:Bill.Williams@dfo-mpo.gc.ca">Bill.Williams@dfo-mpo.gc.ca</a>	<a href="mailto:Sarah.Zimmermann@dfo-mpo.gc.ca">Sarah.Zimmermann@dfo-mpo.gc.ca</a>
~Sept 25-Oct 28	Sir Wilfrid Laurier	-	Moorings (DFO)	<a href="mailto:Bill.Williams@dfo-mpo.gc.ca">Bill.Williams@dfo-mpo.gc.ca</a>	<a href="mailto:Bill.Williams@dfo-mpo.gc.ca">Bill.Williams@dfo-mpo.gc.ca</a>

# 2024 Bering Strait Mooring Cruise



MODIS SST 26<sup>th</sup> Aug 2004

## NSF AON Funding

**3 moorings, serviced annually covering 4 years**

Sept 2022 to Sept 2026

## **Usual Physical Oceanography Sensors**

Velocity, temperature, salinity (multiple levels)  
Ice thickness and velocity

## **Biogeochemical measurements of lower layer**

SUNA – Nitrate  
Seabird – Dissolved oxygen  
Wetlabs – Fluorescence and Turbidity

## **This year's cruise (within dashed black box)**

**8<sup>th</sup> – 18<sup>th</sup> Sept 2024, Norseman 2**

Nome to Nome, Bering Strait & S.Chukchi

## **Mooring servicing**

Hydrographic sections (as past years)

+ water sampling for nutrients

+ profiling SUNA for nitrate

& continued Trace metal sampling

***Next year's cruise = July 2025***



Norseman II, SVA (Support Vessels of Alaska, Inc.)

115feet, 35m

**Contact: Rebecca Woodgate ([woodgate@uw.edu](mailto:woodgate@uw.edu))**

# CCGS Sir Wilfrid Laurier, Canada and USA-August 2024

**Dates: August 1-13, 2024**

Departs from: Nome, Alaska

Returns to: Utqiagvik, Alaska, USA

Location: Northern Bering and Chukchi Seas

Vessel: CCGS Sir Wilfrid Laurier (SWL)

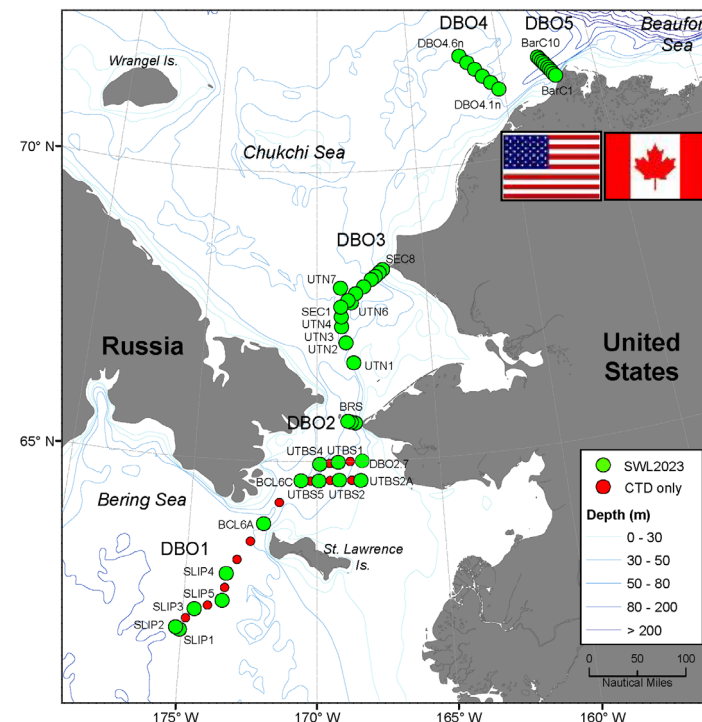
Joint Program: DBO and C30 (Canada's Three Oceans)

Research website: <https://dbo.cbl.umces.edu/>

Project supported by: NSF and DFO Canada; collaboration with USFWS



CCGS Sir Wilfrid Laurier

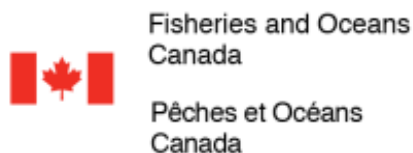


## ➤ Core Ship-based sampling:

- Temperature, salinity, and currents
- Chlorophyll, nutrients, carbon products
- Water column plankton (composition, size, biomass)
- Macrofauna in sediments (composition, size, biomass)
- Sediment grain size and carbon components
- Benthic camera
- Seabird and marine mammal surveys
- Fishery acoustics (variable)
- Bottom trawling (variable)

## ➤ Autonomous sensor sampling via collaborative programs v the DBO

- Gliders, moorings, saildrone
- Satellite observations



- DBO lines sampled as own cruise as well as embedded in process cruises
- Time series data collections, seasonally and interannually; developing Atlantic, Davis Strait/Baffin Bay and East Siberian Sea DBO programs

**Contacts:** John Nelson [John.Nelson@dfo-mpo.gc.ca](mailto:John.Nelson@dfo-mpo.gc.ca) and Jackie Grebmeier [jgrebmei@umces.edu](mailto:jgrebmei@umces.edu); <https://arcticdata.io/catalog/portals/DBO/Data>

# RV Sikuliaq (SKQ24-12S): DBO-EcoFOCI-AMBON-CEO Collaborative Ecosystem Cruise; August 7-27, 2024



Seth Danielson<sup>1\*</sup> and Matt Galaska<sup>2</sup>

<sup>1,\*</sup> University of Alaska Fairbanks, Alaska, USA, [sldanielson@alaska.edu](mailto:sldanielson@alaska.edu) and

<sup>2\*</sup> PMEL/NOAA, Seattle, Washington, USA, [matt.galaska@noaa.gov](mailto:matt.galaska@noaa.gov); \*Co-Chief Scientists

## Objectives

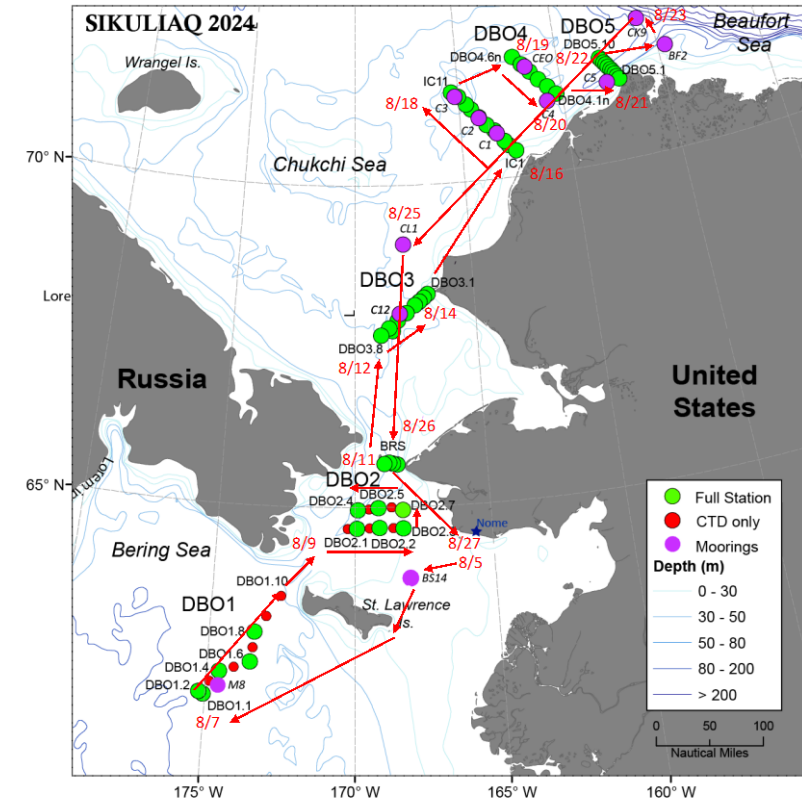
- Evaluate ecosystem status, biodiversity, and change at time series stations
- Deploy and recover NOAA and UAF moorings
- What conditions cause marine animal and seabird population to vary?

DBO: Distributed Biological Observatory (Jackie Grebmeier, UMCES)

EcoFOCI: Ecosystems and Fisheries Oceanography Coordinated Investigations (Phyllis Stabeno, NOAA)

AMBON: Arctic Marine Biodiversity Observation Network (Katrin Iken, UAF)

CEO: Chukchi Ecosystem Observatory (Seth Danielson, UAF)



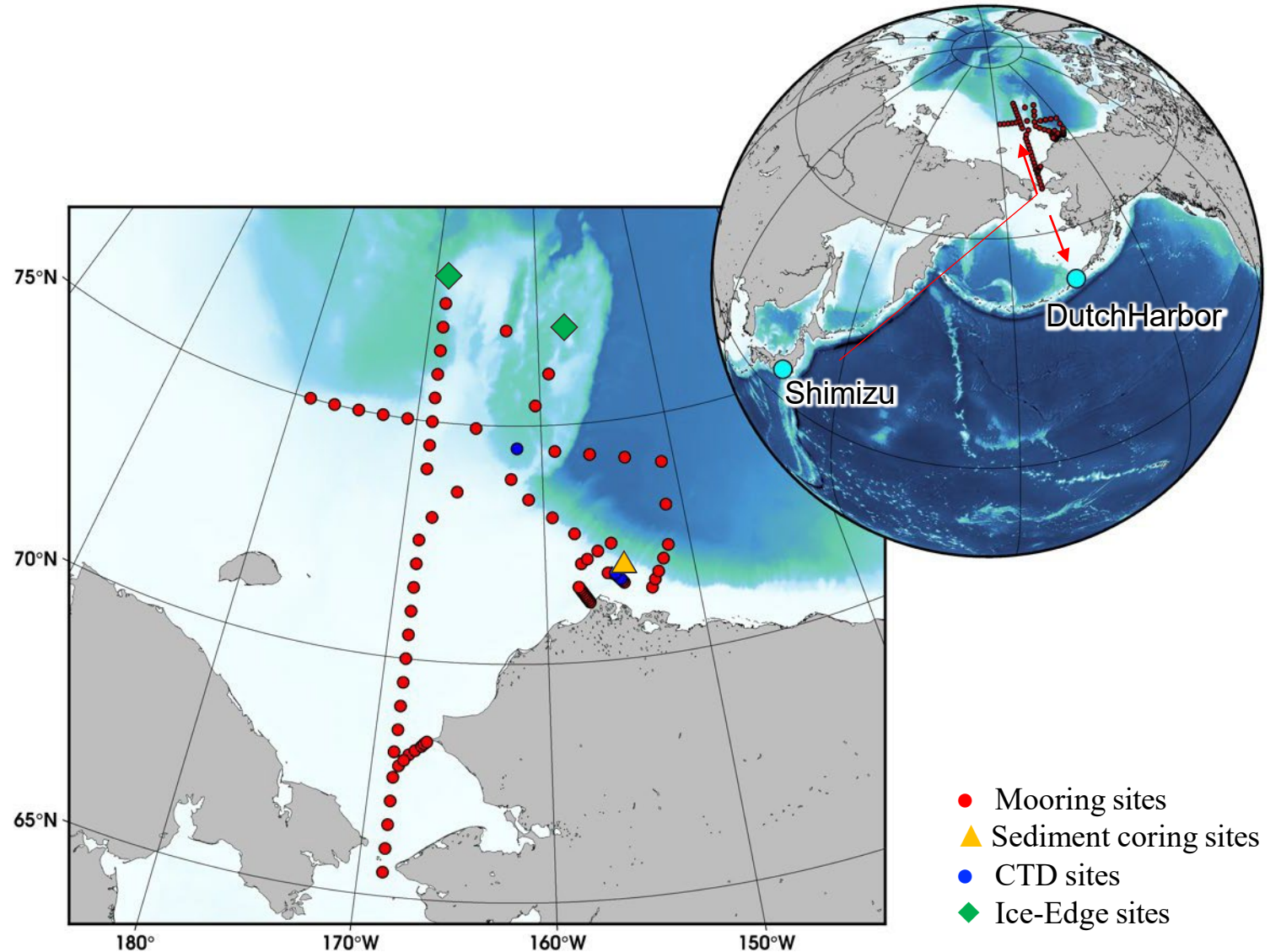
# RV Mirai cruise, Japan Aug-Sept 2024

## Tentative Cruise Schedule

Aug 25 Depart Shimizu  
Sep 5 Bering St.  
Sep 24 Bering St.  
Sep 30 Call Dutch Harbor

## Planned Activities

- CTD
- Sediment coring
- Mooring recovery/redeployment
- In-water Drone trails
- Wave&Ice surveys etc.
- Plankton net



# Contributions of Indigenous Knowledge

## Key Needs



Presentation of plaque from USCGC Healy  
honoring sea-faring people of Diomedes,  
2006



Community meeting,  
Kotzebue



Coming and going in Savoonga

- Incorporating Indigenous Knowledge Community-led observations
- Bridging the gap between offshore marine research and community-based observations
- Providing scientific observations and information of value to local communities
- Inviting local observers on research cruises



**Thank you for your attention.**

## **Questions and comments?**

Thank you to all Pacific Arctic Region science colleagues and PAG collaborators, field and laboratory technicians over the years for the time series efforts. Financial support for the science provided by the US NOAA, NSF, BOEM, NASA, USFWS, AOOS, NPRB, and international science partners in the Pacific Arctic Group.

<https://dbo.cbl.umces.edu/>

<https://globalocean.noaa.gov/distributed-biological-observatory/>

<http://pag.arcticportal.org>

<https://earth.gsfc.nasa.gov/cryo/data/distributed-biological-observatory>

<https://arcticdata.io/catalog/portals/DBO/Data>

<http://ambon-us.org/>

<https://mbon.ioos.us/>

