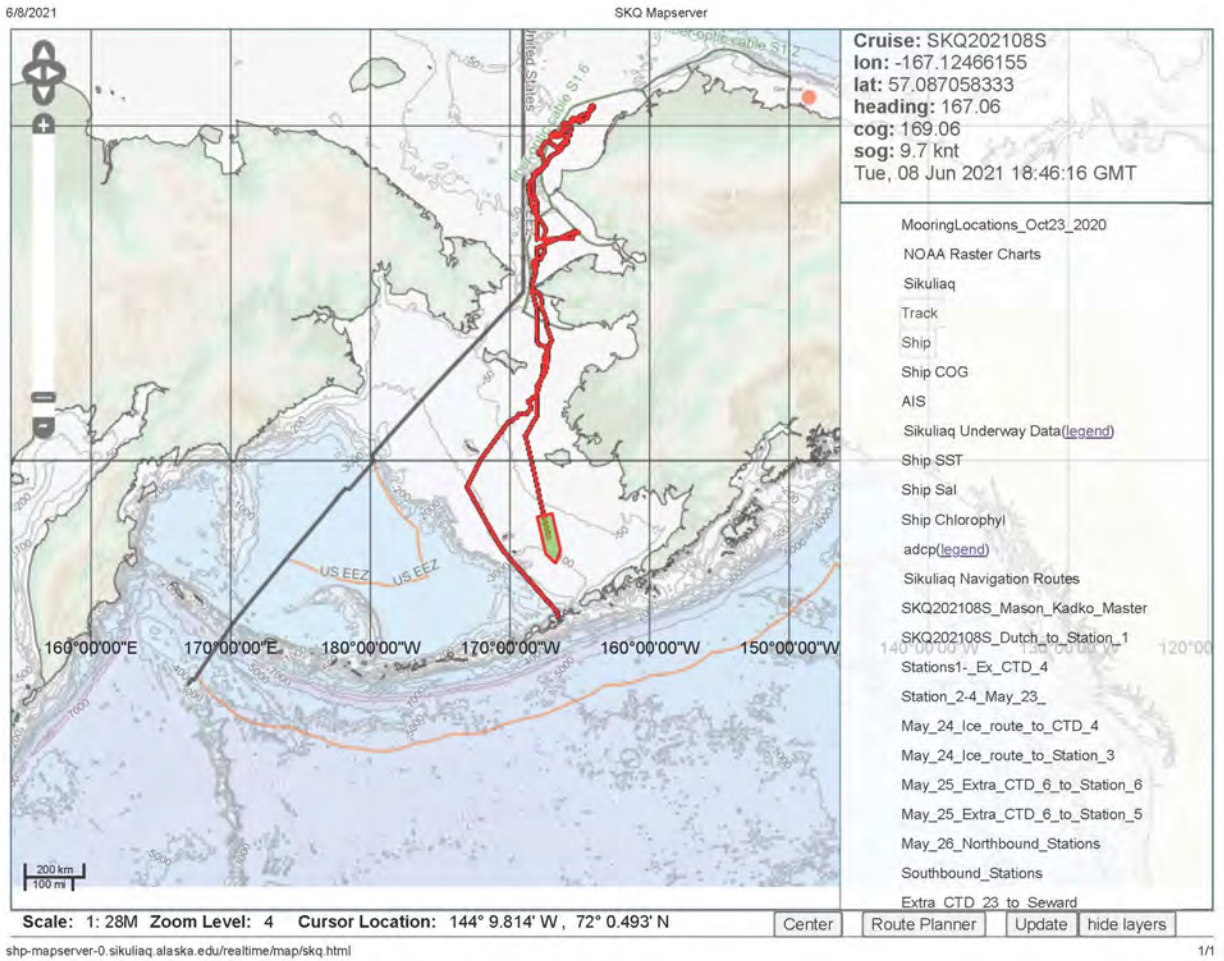
Arctic Research Support & Logistics Program
Support for NSF-funded Projects on Arctic Vessels

Program Managers: Frank Rack, Renee Crain, Jennifer Mercer, & Pat Haggerty

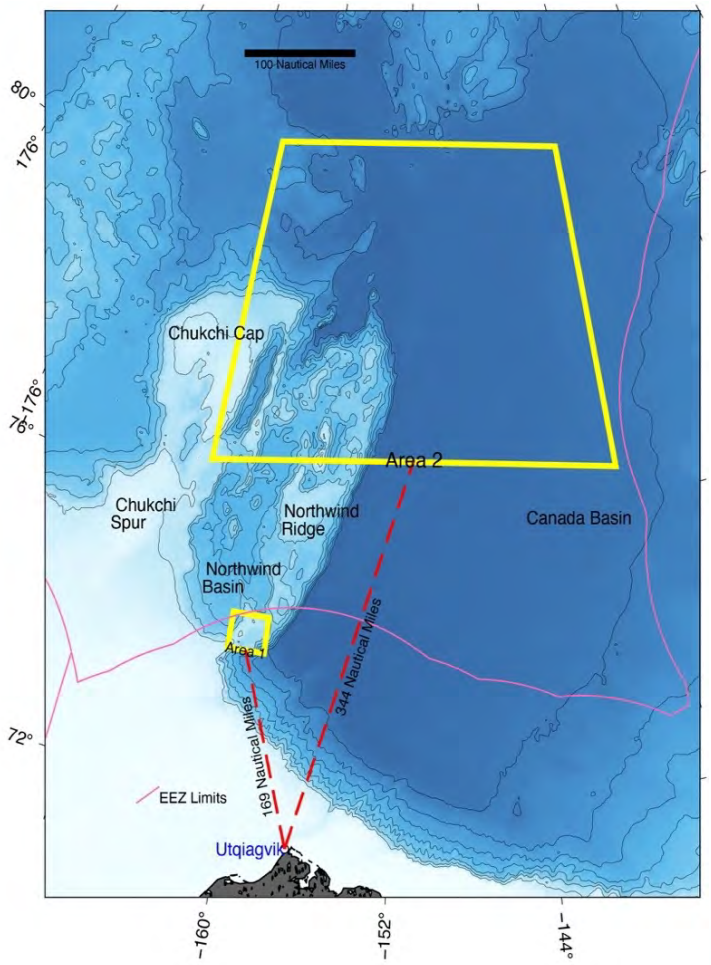
NSF-ARC Projects on R/V Sikuliaq in CY2021

- **Mason/Kadko** (Mercury Cycling, May-June, ANS-1854454)



NSF-ARC Projects on R/V Sikuliaq in CY2021

- **Coakley** (Chukchi Edges II, August-September, ANS-1916575)



Goal: To measure the depth of the ocean and image the sediments and structures beneath the seafloor of the Northern Chukchi Borderland and central Canada Basin to better understand the history of these two features.

NSF-ARC Projects on Chartered US Vessels in CY2021

- **Woodgate (**AON-1758565), Bering Strait Monitoring, charter with Support Vessels of Alaska for use of the **R/V Norseman II**, July 7-17, leaving from Nome and returning to Nome.

Bering Strait Mooring Project July 2021 Cruise

nominally: 7th-17th July 2021, R/V Norseman2 (PENDING)

Bering Strait region, possibly to Cape Lisburne

PIs: Rebecca Woodgate & Cecilia Peralta-Ferriz
University of Washington, USA
woodgate@uw.edu

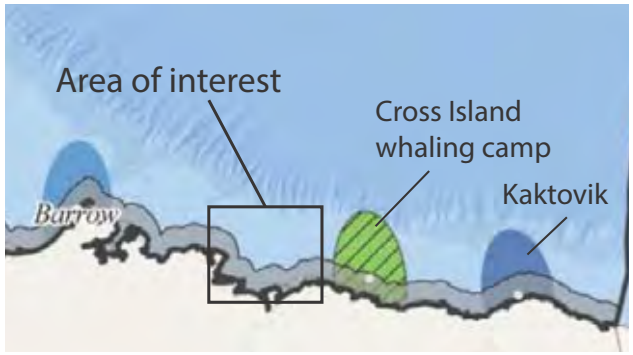
Funding: NSF Office of Polar Programs
Arctic Observing Network

GOALS:
== recovery of 6 moorings currently
in the Bering Strait: A2, A3, A4
(2 of each, as in 2020 only deployments, no recoveries)
== redeployment of 3 moorings
== hydrographic sections as time/weather allows

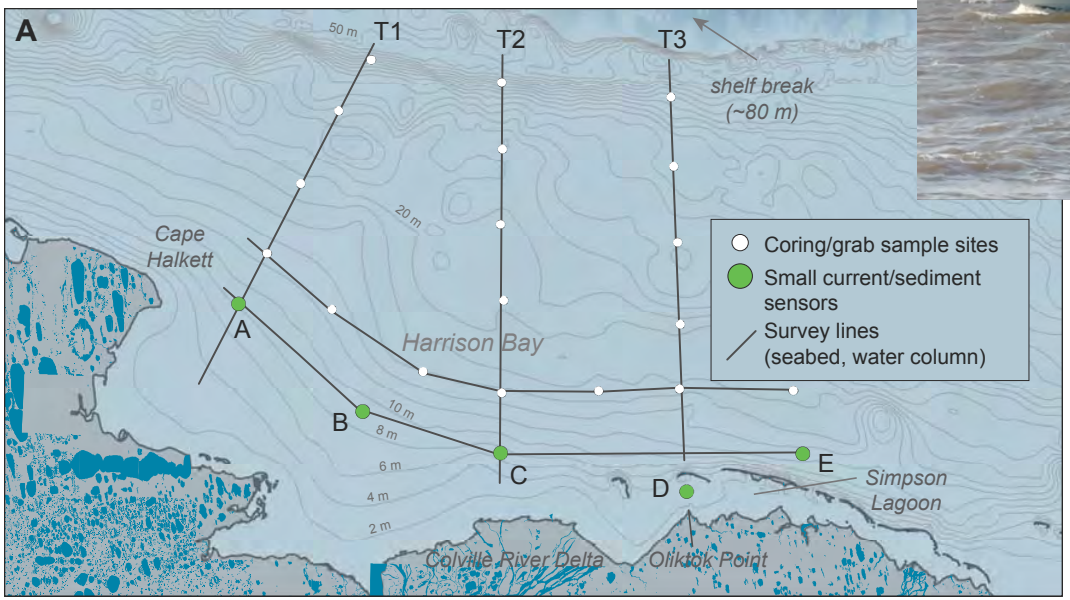
http://psc.apl.washington.edu/HLD/Bstrait/bstrait.html

NSF-ARC Projects on Chartered US Vessels in CY2021

- **Eidam (**ANS-1913195), Arctic shelf sediment fate, charter for use of the **R/V Ukpik**, July 23 to Aug. 6th, departing from West Dock, Prudhoe Bay.



https://rvukpik.com/



Ice re-working, bioturbation, deposition, bypass?

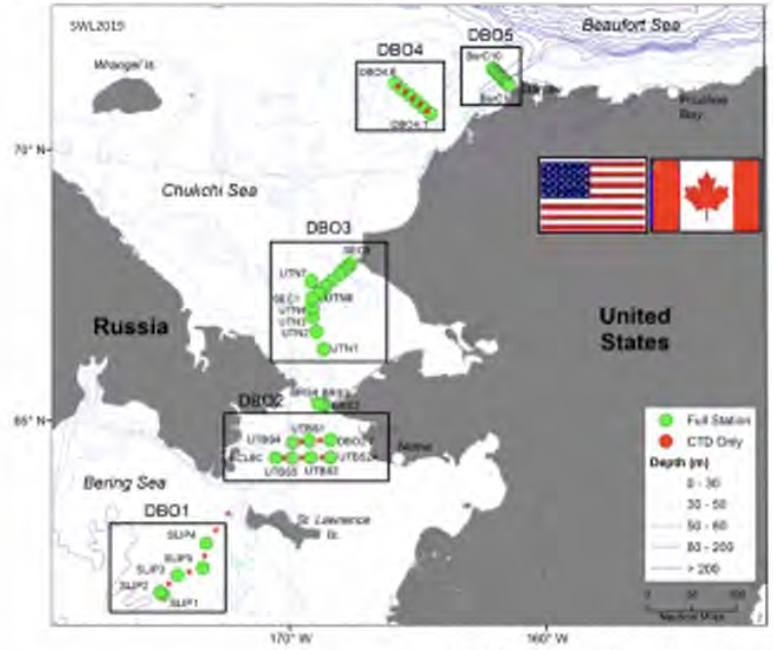
Zone of ice shoaling, compacted seabed (~20-30 m)

Expected zone of ephemeral sediment storage; increasingly erosional profile (0 to ~20 m)

NSF-ARC Projects on International Vessels in CY2021

- **Grebmeier (**AON-1823002), Distributed Biological Observatory (DBO), supported by the **CCGS Sir Wilfred Laurier**, July 5-25, leaving from Victoria, BC, Canada; Helicopter transfer of US team to Utqiagvik (Barrow).

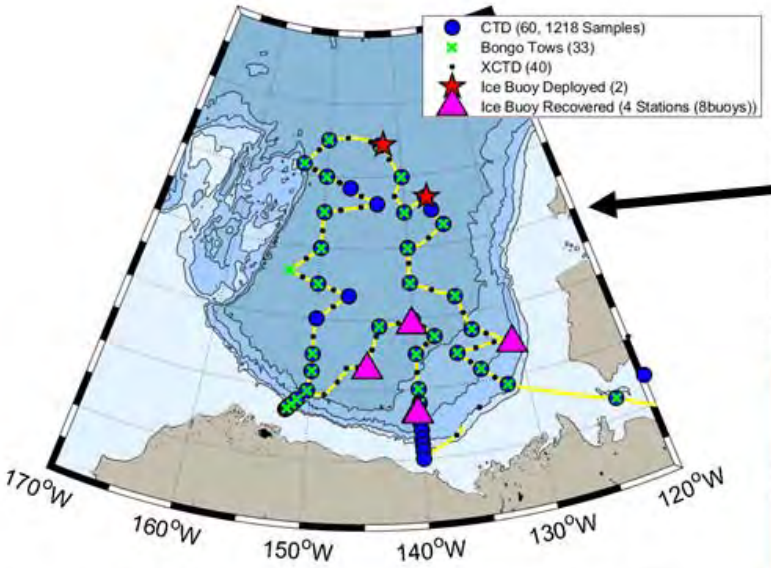
Focus: sampling along latitudinal transect lines developed as a "change detection array" for consistent monitoring of biophysical responses to changing environmental conditions



Date	Location	DBO Line	Distance from Shore (nm)	Time within 5-12 nm off shore (hr)
16-Jul	SW St Lawrence Island	1	60 (CTD only 20)	0
17-Jul	Chirikov Basin	2	60	0
19-Jul	SE Chukchi Sea	3	5	2
20-Jul	NE Chukchi Sea	4	60	0
23-Jul	W of Utqiaġvik	5	5	2

NSF-ARC Projects on International Vessels in CY2021

- **Timmermans** (AON-1950077), Joint Ocean-Ice Study (DFO Canada)/ Beaufort Gyre Observing System (NSF-ARC), supported by the **CCGS Louis S. St-Laurent**, August-September

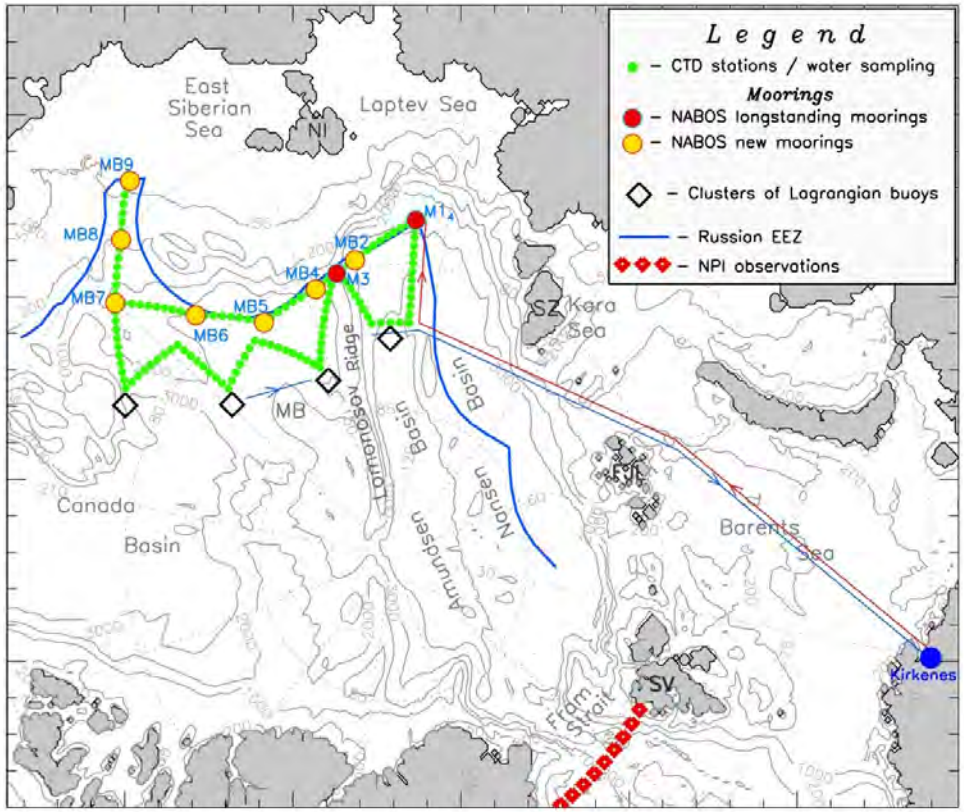


BGOS-JOIS operations in the Canada Basin

Track of the Louis S. St-Laurent, September 5 to October 13, 2020

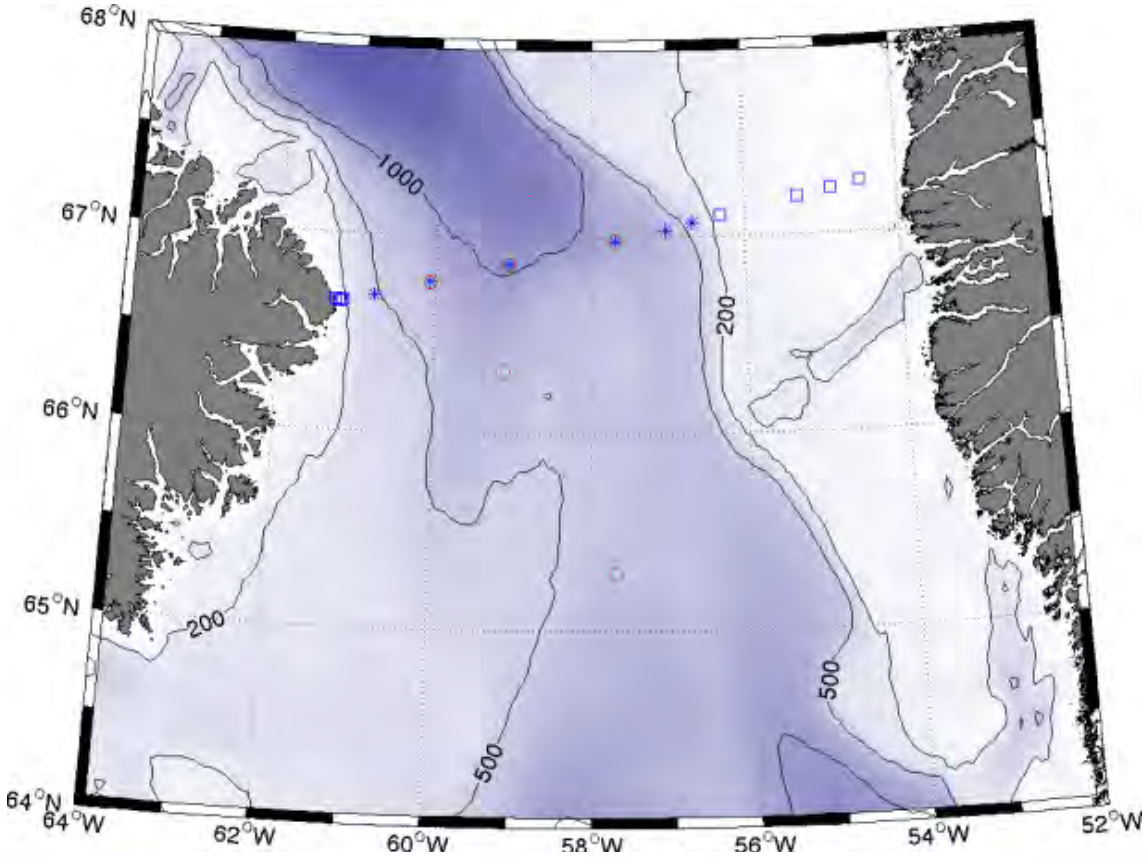
NSF-ARC Projects on International Vessels in CY2021

- **Polyakov (**AON-1724523), Nansen and Amundsen Basins Observational Systems (NABOS), supported by the Arctic and Antarctic Research Institute (AARI) using the **R/V Akademik Tryoshnikov**, from September 10th to October 19th, beginning and ending in Kirkenes, Norway.



NSF-ARC Projects on International Vessels in CY2021

- **Lee (**AON-1902595), Davis Strait Gateway, supported by the Greenland Institute of Natural Resources (GINR) using the **R/V Sanna**, July 30 to August 5, beginning and ending in Aasiaat or Illulisat, Greenland.



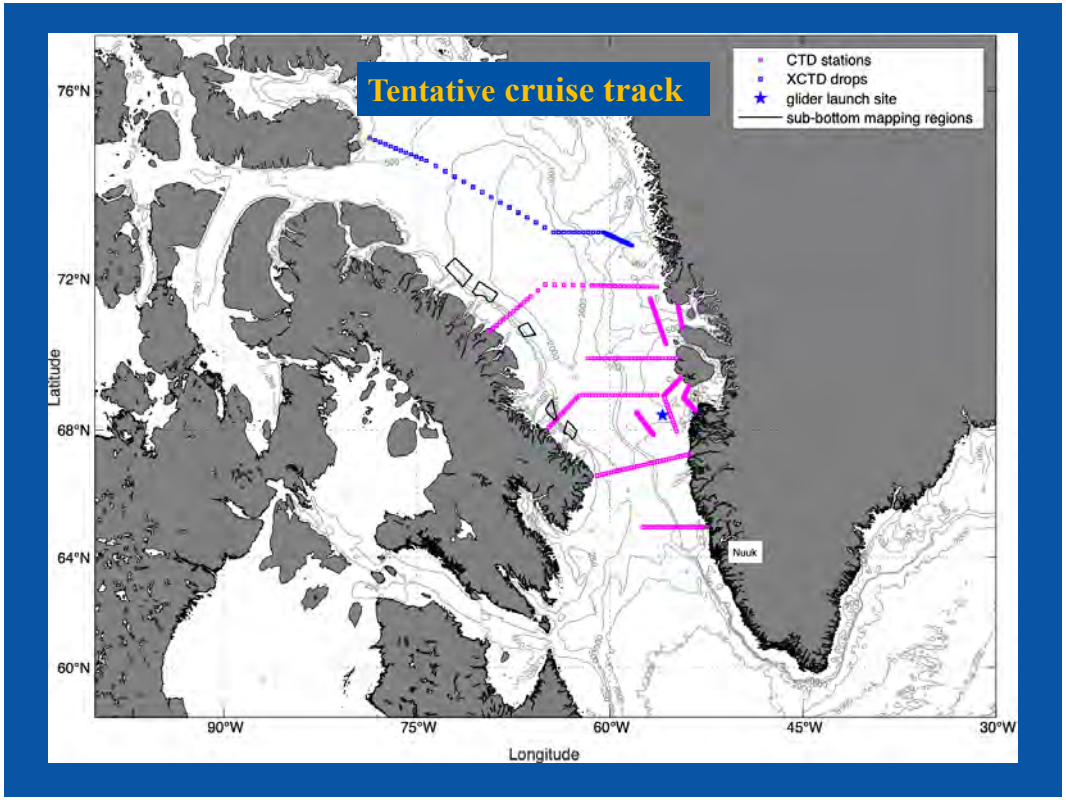
NSF-ARC Projects on USCGC Healy Transits in CY2021

Northwest Passage Transit

- **Goni/Juranek** (particulate OM, biogeochemical analyses, ANS-1949593)
- **Juranek** (SW dissolved gases, biological production rates, ANS-1928684)
- **Welker** (Arctic carbon and water cycles, RAPID, AON-2133156)

NSF-ARC Projects on USCGC Healy Transits in CY2021

Baffin Bay



- **Pickart** (freshwater & heat, West Greenland Current, RAPID, ANS-2034801)
- **Welker** (Arctic carbon and water cycles, RAPID, AON-2133156)

NSF-ARC Projects Requesting Healy Ship Time in CY2022

- **Anderson/Pickart** (Toxic Algal Blooms) (late July-August), ANS-1823002),
- **Goni/Juranek** (multi-tracer biogeochemical study, ANS-1949593),
- **Creamean** (ice nucleating particles, ARCSS-1946657)

NOTE: All three of these projects planned to be on the same vessel; The TAB cruise has been waiting for 4 years to be scheduled due to various reasons.

- **Ashjian** (Synoptic Arctic Survey) (August-September), ARCSS-2053098)

NOTE: This project is in the process of being recommended for funding. It requires operations into the high Arctic (e.g., up to the North Pole).

- **Pickart** (monitoring mooring (October-November), AON-1733564)

NOTE: This project could be done on R/V Sikuliaq or USCGC Healy depending on schedule availability. It is a multi-year, recurring project.

Ship-based Science Technical Support in the Arctic (STARC)

Purpose: To enhance marine science and technical services provided to NSF-supported research cruises on U.S. Coast Guard cutter USCGC Healy.

U.S. Coast Guard (USCG) provides basic services that are augmented by the STARC team to the level provided by the University-National Oceanographic Laboratory System (UNOLS) for supporting academic research.

The STARC team performs two primary functions: (1) to plan, coordinate, and deliver science technical support onboard Healy, augmenting the role of the USCG marine science technicians, and (2) to coordinate with NSF, USCG, and the academic community to provide for the operation, maintenance and upgrade of science equipment installed or used on Healy.

The Arctic Sciences Section collaborates with USCG to schedule and manage the icebreaker(s) in collaboration with other federal agencies and involving the research community through the Arctic Icebreaker Coordinating Committee (AICC), a subcommittee of UNOLS.

Thank You! Any Questions?

Photo by Bill Schmoker (PolarTREC 2010), ARCUS

https://www.supportvesselsofalaska.com/

https://inter-j01.dfo-mpo.gc.ca/fdat/vessels/81

UAF-CFOS, Photo by Mark Teckenbrock