

STARC Report AICC Winter 2023



2022 Mobilization Review

2022 Operations

2022 STARC Solicitation and Award

STARC Proposed Staffing Model



Acknowledgements



National Science Foundation (NSF)
University National Oceanographic Laboratory System
United States Coast Guard (USCG)
Arctic Icebreaker Coordinating Committee (AICC)
Multibeam Advisory Committee (MAC)
WHOI Potential Fields Pool Equipment (PFPE)
National Geospatial-Intelligence Agency (NGA)
STARC Partner Institutions (SIO, OSU, UW)

2022 Dockside Mobilization Review



CTD, SSW, and MET sensors

- Sensor calibrations completed and delivered

Science Seawater Water

- Reconfigured water wall based on previous seasons observations
- Supported pCO₂ and Picarro gas analyzer installations

Ultrasonic anemometer forward jackstaff

- Metek Omni 3D replaced

Oceanographic Wire

- Winch monitoring system support during winch and wire spooling operation
- Slip ring terminations and maintenance

Computers and Data Management

- Software and hardware maintenance
- Virtual machine cluster maintenance
- Replace damaged machines and UPS units
- Audit automated STARC systems to meet cybersecurity requirements

Gravimeters

- BGM-3 gravimeter mobilization
- Additional monitoring to confirm sensor calibration

Shakedown

- Multibeam patch test complete
- ADCP calibration coordinated with UHDAS
- Acquisition systems operational

2022 Operations



HLY22TB Transit Seattle to Seward

- Opportunistic data collection
- Identified and resolved remaining instrumentation issues

HLY2201

- SSW Fluorometer and transmissometer troubleshooting
- Swapped conductivity, transmissometer, and fluorometer on CTD

HLY2202

- Installed new CDOM ECO Fluorometer on CTD
- Autosal repairs required at sea
- Loss of CTD rosette, spare rosette and sensors pressed into service
- Winch LCI-90i system issues will require collaboration with USCG and NSF to resolve, in progress

2022 NSF STARC Solicitation



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

Augmenting Science Support on the USCGC Healy

PROGRAM SOLICITATION

NSF 22-528

REPLACES DOCUMENT(S):

NSF 10-594



National Science Foundation

Directorate for Geosciences
Office of Polar Programs

- SIO, OSU and UW partnered and responded to the solicitation and were successful
- This is a five-year cooperative agreement to allow to more flexibility as requirements change
- The institutional leads considered the solicitation and the staff necessary to provide the support requirements.

Previous STARC Staffing Model



STARC Coordinator

- Has been historically funded in the 75% to 100% level and is the only position that has been full time on the project.

Technical Support Staff

- Primarily STARC Marine Technicians are scheduled from the partner institutions technical groups that have augmented their staffing.
- **SIO** - Shipboard Technical Support
- **OSU** - Marine Technician Group
- **UW** - Shipboard Science Support Group (2020)

Limited personnel resources has been a recurring issue for the management of the program with this model. This is largely due to the seasonal window of operations

Proposed Staffing Model Changes



STARC Coordinator

The STARC Arctic Cruise Coordinator will serve as a single point of contact for the U.S. Coast Guard and funding agency program managers, and will be a primary point of contact for principal investigators and participating scientists for all long lead-time planning. This position will be a senior STS technician who will be devoted full-time to lead the effort for planning, coordination, and reporting of research support activities for Arctic cruises. An important function for the STARC Arctic Cruise Coordinator early in the planning process will be to advise and assist NSF and other agency program managers during the planning phase for projects that are being considered. As soon as cruises and projects for an upcoming field season are identified by the funding agencies, the STARC Arctic Cruise Coordinator will consider the objectives of the missions, the equipment and technical personnel required, the research area, and specific logistics required, and make support recommendations based on the schedule being considered by the USCG.

Proposed Staffing Model Changes



Cyberinfrastructure Coordinator

The STARC Cyberinfrastructure (CI) Coordinator **will focus on the coordination of the computer systems**, display systems, and instrumentation systems supported by the STARC program in a manner that meets obligations and expectations, including maintaining the level of information system security required by the USCG to operate the Polar Science Network (PSN).

Proposed Staffing Model Changes



Systems Integration Engineer

The STARC Systems Integration Engineer (SIE) will provide technical support to facilitate the integration of project-specific science instrumentation for individual cruises and for the entire sailing season. In addition to integration of instrumentation systems, the SIE **will support the integration of data acquisition streams for successful data delivery within the shipboard scientific instrumentation environment** and will perform recommissioning activities to re-establish the environment at the start of every field season. When onshore and not sailing, this position will provide remote support as practical and review sample data before submitting data to the Rolling Deck-To-Repository (R2R) program. The R2R program provides quality assurance and management of underway data for the Academic Research Fleet to ensure preservation of, and access to, our national oceanographic research assets.

Proposed Staffing Model Changes



OSU and UW Lead Technicians

- will be designated from one of the partner institutions for each cruise.
- will be responsible for performing detailed cruise planning once assigned to a research cruise with the project PI(s) and Chief Scientist(s) and the USCG through to successful completion of the cruise.
- **will serve at sea as the single point of contact between STARC and the USCG onboard the vessel to avoid any confusion in the chain of command.**
- will lead at least one cruise per year at sea, in addition to the annual shakedown cruise.
- will be assigned specific hands-on maintenance projects in the offseason, as required.
- will utilize expertise within the STARC group and from their institution's marine technical staff for completion of assigned activities, as necessary to deliver quality service to the science community.
- will be responsible for seeing their projects to completion, with work performed by them or by their delegates, with oversight provided by the STARC Arctic Cruise Coordinator.

At Sea STARC Staffing



Shakedown

~6 at sea personnel

Transits

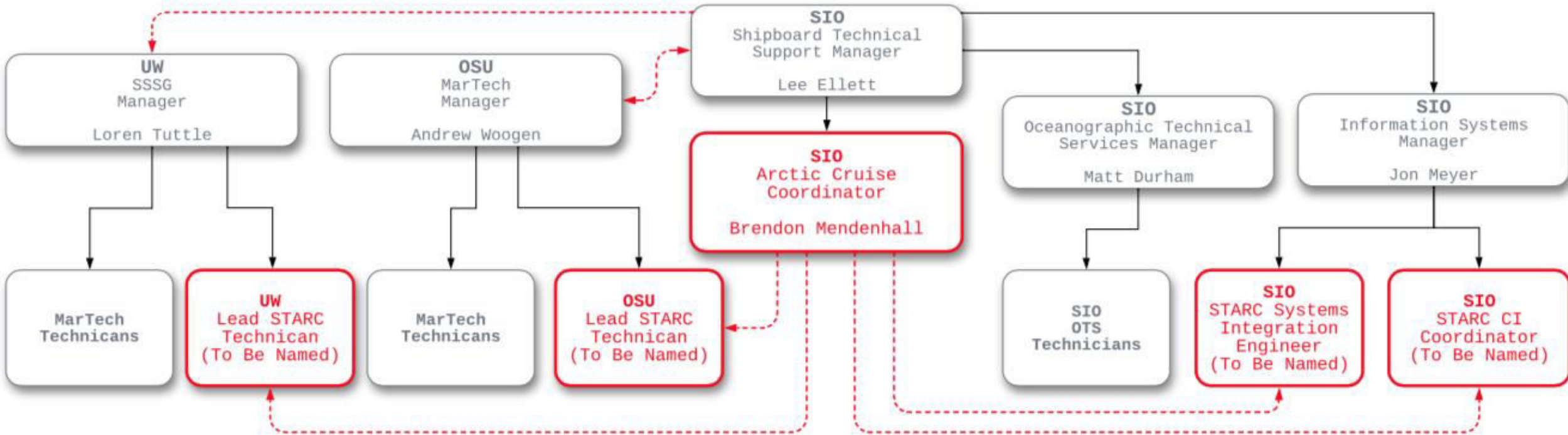
Minimum 2 at sea personnel

Research Missions

Minimum 3 at sea personnel

- CI Coordinator and/or System Integration Engineer are key sailing participants during shakedown and transits. This adds to the available pool of program support staff
- Inclusion of the Lead STARC Technician on research missions

STARC Organizational Chart



Questions and Discussion

