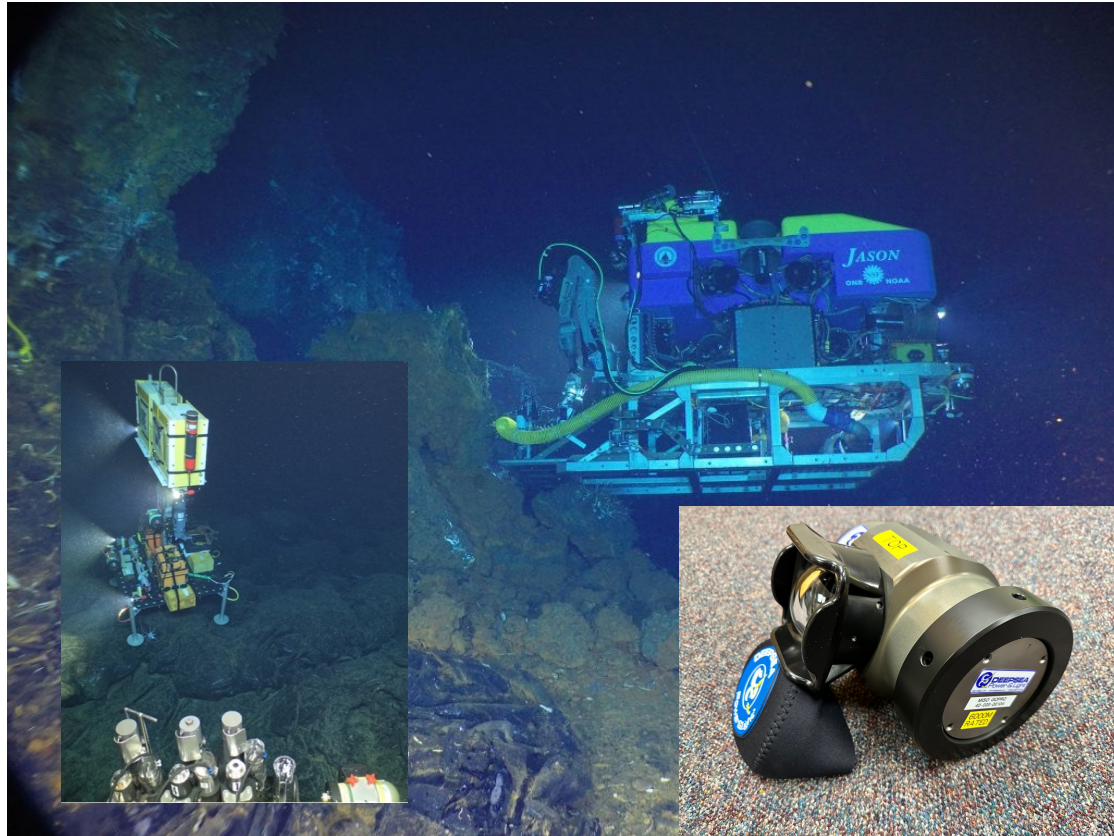


MISO

Multidisciplinary Instrumentation in Support of Oceanography



<https://www2.who.edu/site/miso/>

During calendar 2025, the WHOI SSSG-MISO Facility supported 8 expeditions on 5 academic research vessels.

The research and seagoing facilities were funded by the US National Science Foundation, Ocean Sciences Division. The cruises involved research in the western Ross Sea (Southern Ocean), eastern Pacific, Gulf of Alaska, Gulf of California, and northeast Pacific offshore Oregon/Washington and British Columbia.

The field work involved:

- Extensive coordination with the various science teams conducting the research, pre-cruise to develop logistics and configuration plans for how the MISO imaging systems would be integrated into science operations, multicoring deployments and NDSF vehicle operations.
- Identifying and training personnel to handle both coring and MISO real-time operations.
- Coordination with the OSU MARSSAM Facility and vessel technical operations groups.
- Mobilization and demobilization of the equipment at national and international ports.



<https://www2.who.edu/site/miso/>

Brief Summaries of WHOI-SSSG-MISO Field Operations:

1) January-February - AT50-33 (Atlantis) - EPR 9° 50'N - McDermott-Ackberger et al. MC400 multicorer with MISO r/t imaging capabilities.

2) February-March - NBP25-01 (NB Palmer) - offshore Antarctica Terror Rift - Tominaga et al.

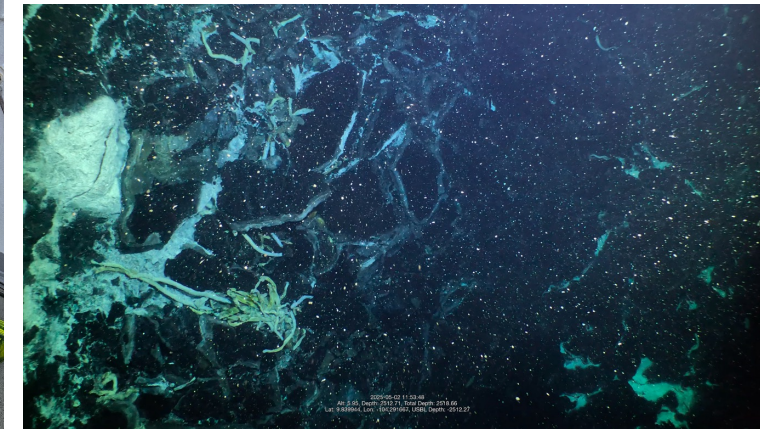
MISO TowCam system configured for use as a primary data collection system for science operations using a single mode fiber optic cable providing real-time HD video using LED light, and 24MP still imaging using 300 watt/sec strobe in addition to near-bottom magnetometer, CTD and ORP data acquisition to guide dredging and multibeam mapping.

3) April-May - AT50-36 (Atlantis)- EPR 9° 50'N - Wozniak et al.

MC400 multicorer with MISO r/t imaging capabilities for science objectives during night operations, and conversion to a towed camera system for surveys of key volcanic and hydrothermal features when *Alvin* was not able to dive following the **April 29 volcanic eruption** observed at Tica Vent. MISO GoPro cameras provided the highest resolution imaging of the new 2025 lava flows and impacts to known hydrothermal vent sites along axis from 9° 49'-51'N.

4) June - WS25197 (Walton-Smith) Gulf of Mexico - Bourbonnais & Mason

MISO GoPro self-recording camera, LED light and MISO deep-sea battery used on MC400.





<https://www2.who.edu/site/miso/>

Brief Summaries of WHOI-SSSG-MISO Field Operations:

5) June-July - SKQ202512S (Sikuliaq) - Gulf of Alaska - Steen & Tessin

MISO GoPro self-recording camera, LED light and MISO deep-sea battery used on MC800 to document bottom conditions where multicoring operations were conducted.

6) July-August - RR2504 (R. Revelle) - Labrador-Greenland - Hines et al.

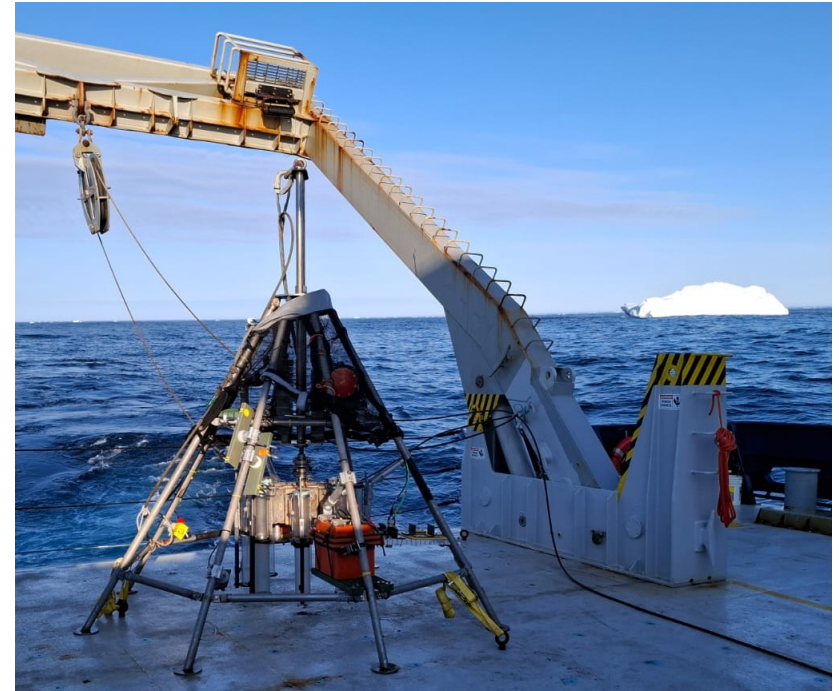
MC800 multicorer with MISO r/t imaging capabilities, including 5.3k video acquired using a MISO GoPro camera, via coax 0.680 conducting cable to support primary science objectives and operations for high-latitude sampling on transects across the Labrador sea and south of Greenland.

7) August - AT50-41 (RV Atlantis) - OOI Axial Smt./Hydrate Ridge - Kelly-Wu et al.

MISO GoPro self-recording camera recording 5.3k video and LED lights were configured on ROV *Jason* to acquire down-looking imagery to fully map hydrothermal sites on Axial Seamount and southern Hydrate Ridge.

8) September At50-42 (RV Atlantis) - Main Endeavor Field - McDermott et al.

MC400 multicorer with MISO r/t imaging capabilities for ancillary science objectives during night operations, and use of multiple MISO GoPro cameras on *Alvin* recording 5.3k video to support science operations and BBC filming for Blue Planet III series (to air in 2026). Additionally, two MISO GoPro cameras and an LED lighting/switching/power system was assembled on the small NDSF/MISO seafloor lander to provide additional imaging capacity for BBC filming.





<https://www2.whoi.edu/site/miso/>

WHOI-SSSG-MISO Facility Team

Sarah Fuller – WHOI-SSSG Manager

Dan Fornari – MISO Team co-Manager

Dwight Coleman – WHOI Director of Ocean Imaging and MISO Team co-Manager

Eric Hayden – MISO engineer

Marissa Small – MISO technician

Eli Perrone – EP Oceanographic – MISO team engineering consultant