



**OCEAN**  
EXPLORATION

## NOAA Update

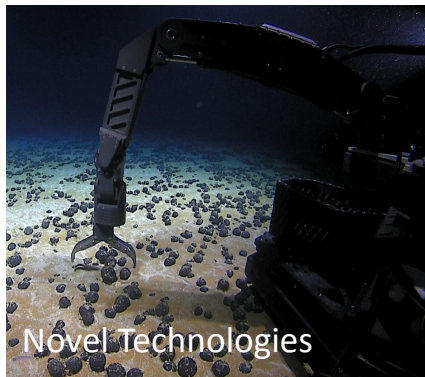
DeSSC Community Meeting - FEB 2024

Rachel Medley, Chief Expedition and Exploration  
Division, NOAA Ocean Exploration

# Explore to Discover, Discover to Understand, and Understand to Inform



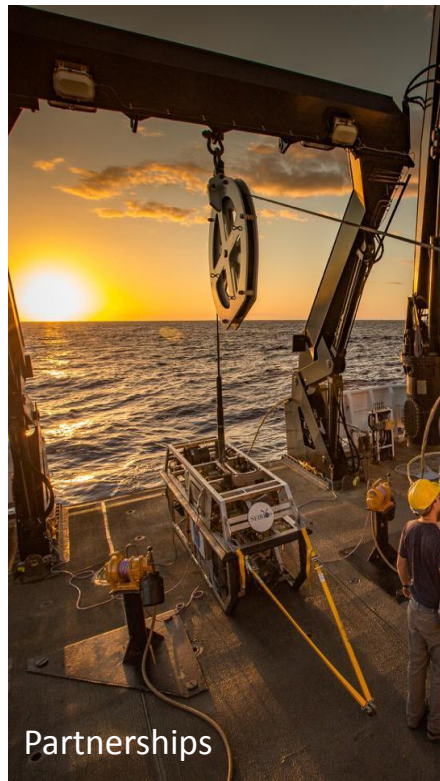
NOAA Ship *Okeanos Explorer*



Novel Technologies



Competitive Grants



Partnerships



Education



Outreach

# Ocean Exploration Cooperative Institute



OEI is an integrated ocean exploration cooperative that aims to:

- accelerate exploration through the development of new ocean technologies and operational concepts
- apply new approaches to underexplored regions of the US EEZ and to ocean exploration data
- train the next generation of ocean explorers and blue technology workers
- facilitates additional partnerships, such as:

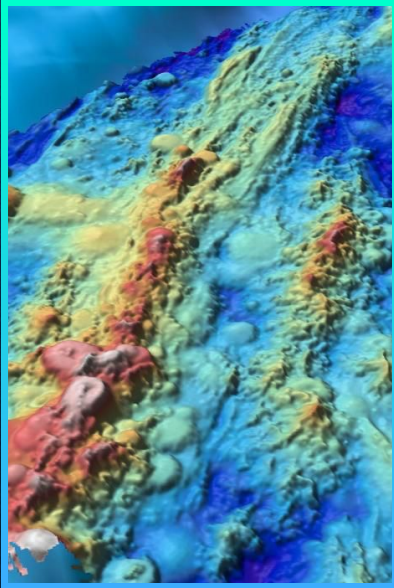


SAILDRONE



# OECI: Charting Ocean Exploration's Future

## SEAFLOOR MAPPING



Filling gaps in ocean mapping, with traditional vessels and novel autonomous systems, in support of NOMECS strategy and Seabed 2030.

## WATER COLUMN & BENTHIC EXPLORATION



Exploring the ocean interior for scientific advancement, sustainable development, and ocean health and safety.

## OCEAN TECHNOLOGY



Expanding ocean research and exploration capacity through cooperative robotics, autonomy, and telepresence.

## EDUCATION & OUTREACH



Partnership with Tuskegee University and New England Institute of Technology to expand participation in Ocean Exploration.

# Our Principles of Exploration Meet the National Imperative

NATIONAL STRATEGY FOR MAPPING, EXPLORING, AND CHARACTERIZING THE UNITED STATES EXCLUSIVE ECONOMIC ZONE



NATIONAL STRATEGY FOR MAPPING, EXPLORING, AND CHARACTERIZING THE UNITED STATES EXCLUSIVE ECONOMIC ZONE



Explore to meet community needs



Always collect useful and quality data



Systematically expand exploration footprint



Share discoveries to engage the public



Produce open access data with necessary metadata



Release data in a timely manner

# By the numbers: 2023 A year in review

## NOAA Ship *Okeanos Explorer*



9

Expeditions



157

Days at Sea



36

Remotely Operated  
Vehicle Dives



5

Autonomous  
Underwater Vehicle  
Dives



247,686

square kilometers  
(95,633 square miles)

Seafloor Mapped\*



215,423

square kilometers  
(85,175 square miles)

Seafloor Mapped in  
U.S. Exclusive  
Economic Zone\*



108

Primary Biological  
Samples Collected



39

Primary Geological  
Samples Collected



164

Water Samples Collected  
(eDNA)



112

Participating Scientists



386,200+

Livestream Views

## Competitive Grants



9

Competitive Grants Awarded



110

Days of Uncrewed Maritime Systems  
Deployment by Grant Recipients



30

Ocean Education Mini-Grants Awarded

# By the numbers: OECI 2023



11

Expeditions



203

Days at Sea



61

Remotely Operated Vehicle  
Dives



46

Other Uncrewed Maritime  
Systems Dives



148,068

square kilometers  
(57,169 square miles)

Seafloor Mapped



132,364

square kilometers  
(51,106 square miles)

Seafloor Mapped in U.S.  
Exclusive Economic Zone



777

Primary Biological Samples  
Collected



199

Primary Geological Samples  
Collected



392

Water Samples Collected (eDNA)



256

Participating Scientists



991,480

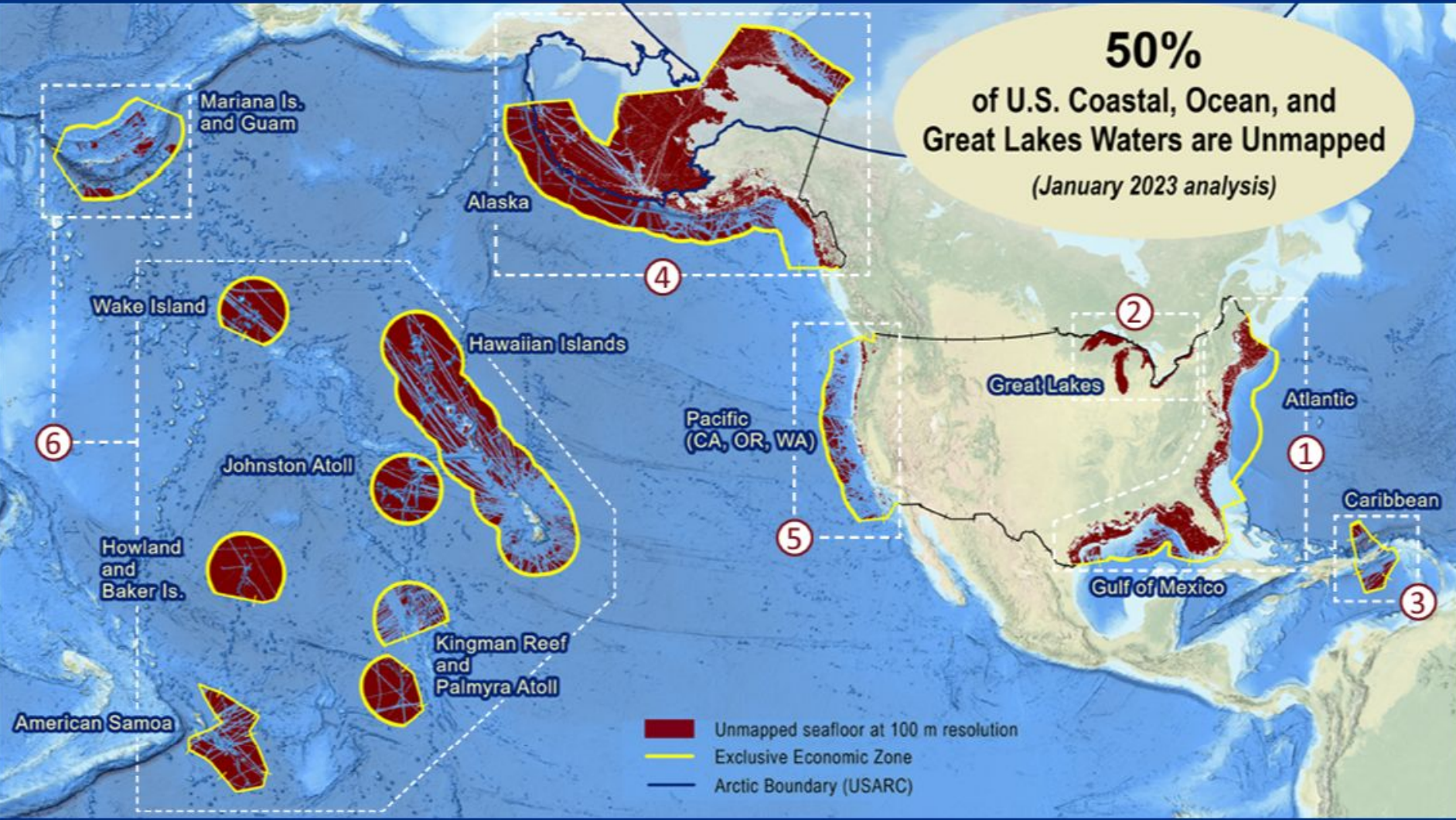
Livestream Views




OCEAN EXPLORATION COOPERATIVE INSTITUTE



EXPLORING THE NATION'S BLUE FRONTIER


**50%**  
of U.S. Coastal, Ocean, and  
Great Lakes Waters are Unmapped  
(January 2023 analysis)



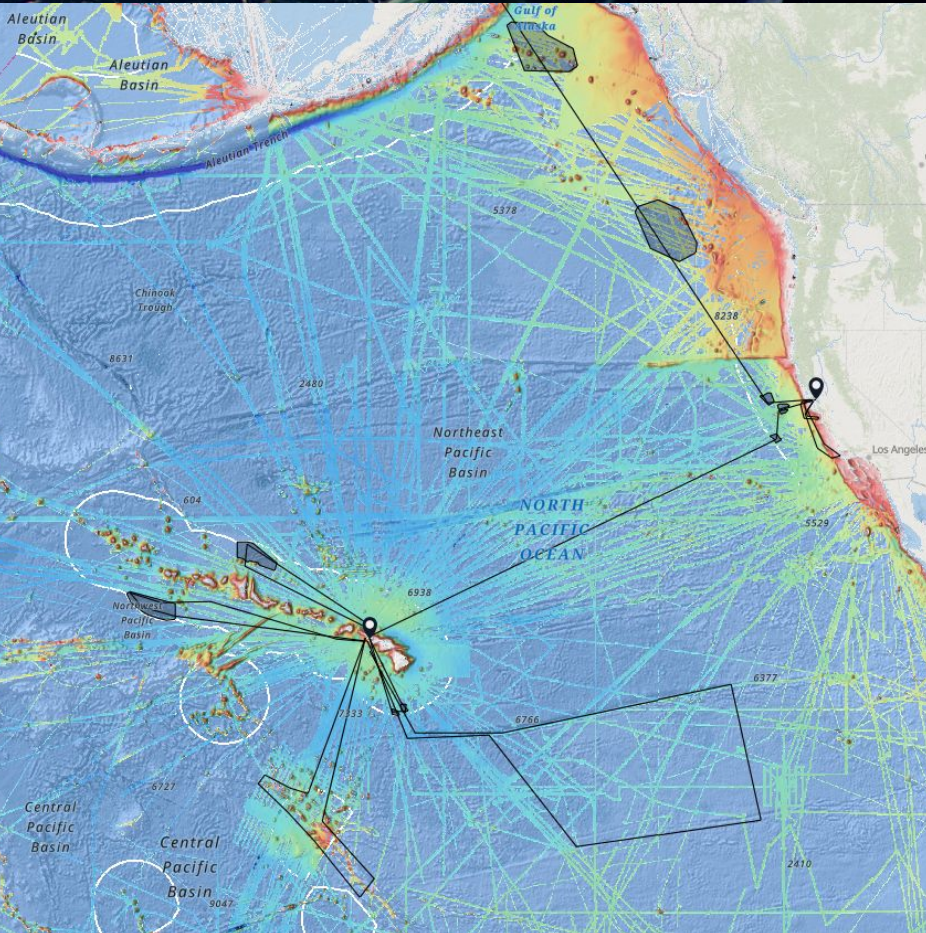
-  Unmapped seafloor at 100 m resolution
-  Exclusive Economic Zone
-  Arctic Boundary (USARC)



# What will be part of Beyond the Blue?

- All of NOAA Ship *Okeanos Explorer* expeditions for CY 2024-2026(+?)
  - OER funded work on R/V Nautilus (Ocean Exploration Trust)
  - NOAA Deep Sea Corals next Regional Initiative
  - Opportunistic deployments for Argo floats, drifters, and other autonomous systems to extend coverage throughout the Pacific
  - Partnership driven expeditions and engagement best practices with Pacific Island Nations
  - BOEM/USGS collaborative projects
  - DPAA collaborative efforts
  - And more!
- 

# FY24 *Okeanos Explorer* Schedule Overview



Operations in the Pacific Islands will include exploration of

- Papahānaumokuākea Marine National Monument
- Kingman and Palmyra Unit of the Pacific Remote Island Marine National Monument
- US EEZ around HI
- Clarion-Clipperton Fracture Zone



*We need to hear from you to help us refine specific targets!*

# Gathering Community Input



## 2024 E/V *Nautilus* expeditions call for science input

In 2024, E/V *Nautilus* will conduct several telepresence-enabled, multidisciplinary expeditions to explore the deep sea throughout the Pacific. The purpose of this form is to provide an opportunity for input on expedition planning by identifying exploratory interests, mapping priorities, ROV dive targets, physical sample requests, and technology integrations. Please provide your input by **February 1, 2024**. Information received will be used to open up opportunities for collaboration and refine expedition plans, which will be discussed during community webinars preceding each expedition.

Ocean Exploration Trust plans to continue operating E/V *Nautilus* in the Central and Western Pacific for several years to come in partnership with NOAA Ocean Exploration via the Ocean Exploration Cooperative Institute, and other partners. NOAA Ocean Exploration, in conjunction with other federal agencies, plans to bring NOAA Ship *Okeanos Explorer* to the Central and Western Pacific in 2024-2026, and will coordinate exploration efforts with the Ocean Exploration Trust for the benefit of the broader ocean exploration community. Priorities submitted through this call may therefore be shared with NOAA Ocean Exploration for coordinated planning.



NOAA Ocean Exploration and Ocean Exploration Trust each solicit input from the science community on mapping and ROV exploration targets

A screenshot of a web browser showing the NOAA Ocean Exploration survey page. The page title is "NOAA Ocean Exploration" and the URL is "NOAA Office of Ocean Exploration and Research". The page features a map of the Pacific Ocean with a yellow outline indicating the survey area. The right sidebar contains a "Participate" button and a "Surveys" dropdown menu. Below the map, there is a text box with the following content:

NOAA Ocean Exploration invites EXPRESS campaign collaborators to identify priority areas for mapping and remotely operated vehicle (ROV) operations for *Okeanos Explorer* as it makes its way along the U.S. West Coast.

**NOTE:** NOAA Ocean Exploration prioritizes areas that are unexplored and/or poorly explored. Areas with existing data will likely not be prioritized. Submission of mapping requests and/or dive targets does not guarantee their inclusion in *Okeanos Explorer* operations.

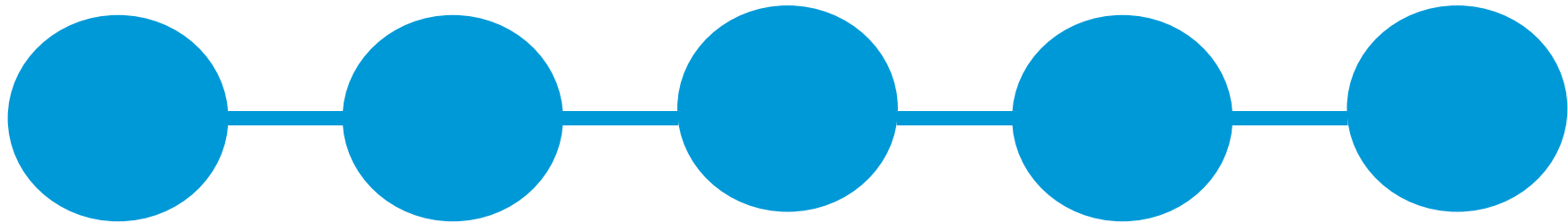
This survey tool will allow you to submit mapping requests and dive targets for use in the design of *Okeanos Explorer* operations along the U.S. West Coast in 2022/2023. *Okeanos Explorer* is expected to be operating in the region from September 2022 through Spring 2023. Operations will focus on unmapped and/or unexplored deepwater (>200 m) areas, and the priorities received through this survey will help define expedition plans as well as specific targets.

Instructions on using SeaSketch can be found [here](#). Please finalize any submissions related to the *Okeanos Explorer* 2022/2023 U.S. West Coast expedition by COB 11/19/2021.

At the bottom of the page, there is a green button labeled "Take the Survey".



# Competitive Grant program - FY 25 Notice of Federal Funding Opportunity



Notice of Funding  
Opportunity  
Spring 2024

Pre-proposal  
Deadline  
~ **May 30, 2024**

Full Proposal  
Deadline  
~ **October 5, 2024**

Award  
Notification  
April 2025

Award  
Start Date  
Sept 2025

- Ocean Exploration Fiscal Year 2025 NOFO will be available on [Grants.gov](https://www.grants.gov):
- Proposal awards range from minimum award ~\$50k to maximum award of \$1M


*Scan to learn more  
about our competitive  
grant program*








# OCEAN EXPLORATION

## Explore with us:

 [oceanexplorer.noaa.gov](https://oceanexplorer.noaa.gov)


 [@oceanexplorationresearch](https://www.facebook.com/oceanexplorationresearch)

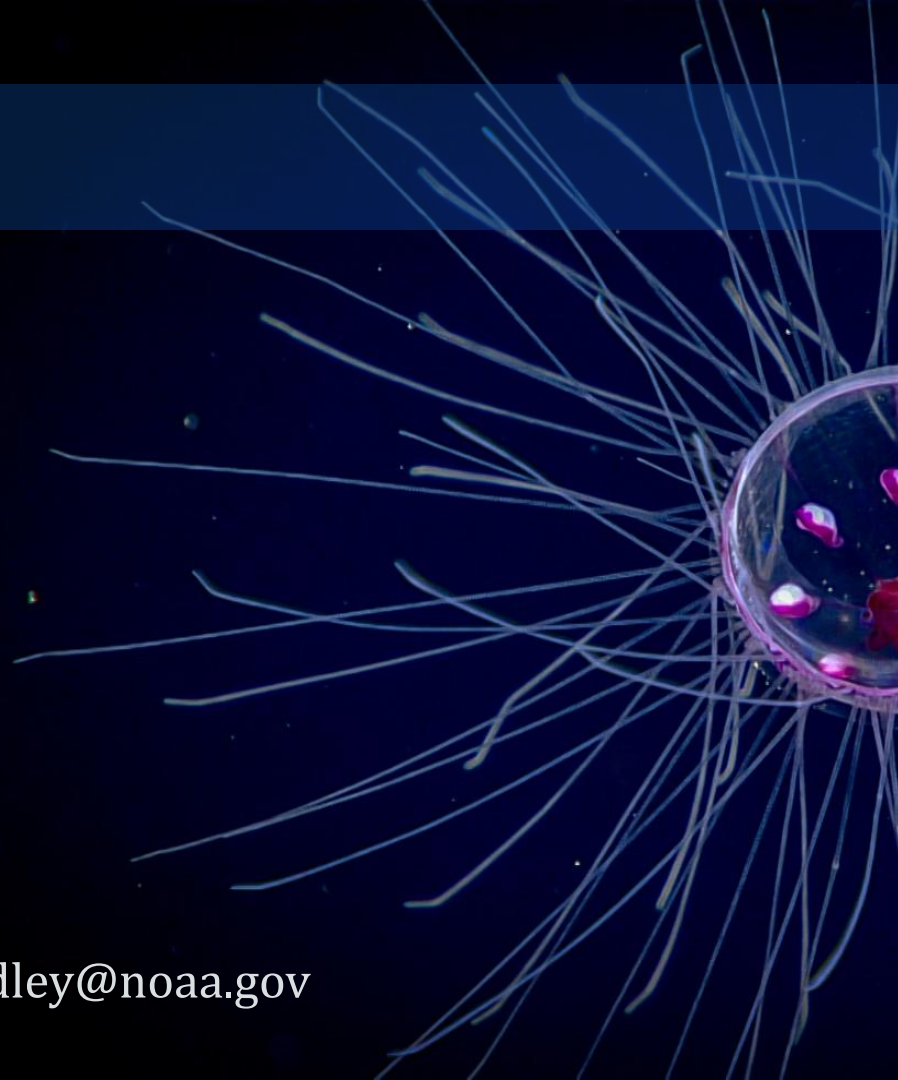
 [@noaa\\_oceanexploration](https://www.instagram.com/noaa_oceanexploration)

 [@oceanexplorer](https://twitter.com/oceanexplorer)

 [@oceanexplorergov](https://www.youtube.com/oceanexplorergov)

## Questions?

 [kristen.crossett@noaa.gov](mailto:kristen.crossett@noaa.gov) and [rachel.medley@noaa.gov](mailto:rachel.medley@noaa.gov)



# FY22 NOAA Funded Projects using NDSF Assets

Southern East Pacific Rise hydrothermal plume and iron biogeochemistry (Oct-Nov 2021) - Use of WaveGlider with ROV Jason and AUV Sentry. PI: Joe Resing (UW/PMEL)

Guayamas Basin Hydrothermal Vents (November 2021) - Integration of dissolved methane and carbon dioxide gas sensor with ROV Jason and AUV Sentry. PI Anna Michele (WHOI)

Escanaba Trough (May-June, 2022) - Cooperative effort with USGS and BOEM. Using ROV Jason and AUV Sentry to investigate sulfide minerals and habitat within the U.S. Exclusive Economic Zone. PI: Amy Gartman (USGS)

Axial Seamount (July 2022) - Integration of membrane-free isotopic methane sensor with ROV Jason. PIs: Jason Kriesel and David Butterfield (OKSI and UW/PMEL)