

Dear Fellow Explorers,

I am just back from the Ocean Sciences meeting in New Orleans where I saw many of you. It was a great meeting with OEI presentations spread throughout. Notably, members of the Inner Space Center, led by Alex DeCiccio, helped put on the opening plenary of the meeting: 'Water Tells Stories Through People in Louisiana.' A large crowd got to see the production and storytelling expertise within the OEI.

In addition, OEI participated and convened a number of sessions, presentations, and town halls, as well as participating in numerous social events (it is New Orleans after all!). The meeting was invigorating both because of our opportunity to share our accomplishments, but also to see what others in the field are excited about and accomplishing. The potential for expanding our impact through collaboration was on full display, and I thank everyone who gave their time and effort to make the meeting a success.

Deepest regards,

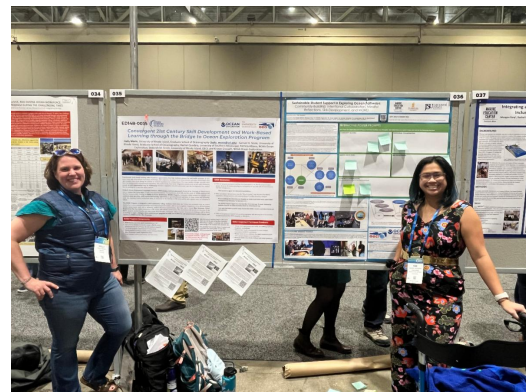
Adam

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OSM-OEI connections

Over 6,000 attendees convened in New Orleans, LA, last week to participate in the 2024 Ocean Sciences Meeting. OEI members presented research, engaged in discussion, and enjoyed the history of the city.



2024 E/V Nautilus Expedition Season Overview

In May, the Ocean Exploration Trust will begin the 2024 field season, which will consist of 10 multi-disciplinary expeditions that will bring E/V Nautilus across the Pacific over a period of 8 months to explore poorly known ocean areas around Hawai'i, the US Pacific Remote Islands, American Samoa, Palau, and Canada. Like previous years, 2024 expeditions will primarily focus on seafloor mapping and ROV explorations of unsurveyed areas, as well as integrating emerging exploration technologies from partners at the Ocean Exploration Cooperative Institute. These expeditions are being planned to address priorities of the US National Strategy for Ocean Mapping, Exploration and Characterization, Seabed 2030, and the UN Decade of Ocean Science for Sustainable Development, as well as community input from scientists, resource managers, local communities and other stakeholders in the geographies where expeditions will take place. E/V Nautilus expeditions in 2024 are primarily funded by NOAA Ocean Exploration via the Ocean Exploration Cooperative Institute, with additional funding from Ocean Networks Canada, and the Bureau of Ocean Energy Management.



AUV Eagle Ray on Okeanos Explorer

From 10/21 to 11/12 and from 11/29 to 12/10 2024, the University of Southern Mississippi autonomous underwater vehicles (AUV) Eagle Ray (ER) and Mola Mola (MM) were onboard the NOAA R/V Okeanos Explorer (EX) in support of EX exploration cruises 2308 and 2309 offshore California.



The AUVs were included to provide high resolution mapping capability in the framework of the EXpanding Pacific Research and Exploration of Submerged Systems (EXPRESS) campaign. EXPRESS is a multiyear, multi-institution cooperative research campaign in deep-sea areas off California, Oregon, and Washington, including the continental shelf and slope. EXPRESS data and information are intended to guide wise use of living marine resources and habitats, inform ocean energy and mineral resource decisions, and improve offshore hazard assessment.

The expeditions onboard the EX represented an exciting but challenging operation for the AUVs and its team. Major challenges include: ship all the equipment from Gulfport, Mississippi to San Francisco, California, build a customize USBL pole to assure acoustic communication between the ship and the vehicles and, overall, adjust the ER launch and recovery procedure from the A-frame to EX ROV crane, however, thankfully the extraordinary experience and collaboration of the EX crew all these difficulties were overcome.

Mesophotic and Deep Benthic Communities Meeting

In early December the OECI was honored to host NOAA at the University of Rhode Island's Graduate School of Oceanography for a week of meetings related to the Mesophotic and Deep Benthic Communities (MDBC) Restoration Projects in the Gulf of Mexico. Each year after the field season has concluded, the MDBC team gathers for a series of adaptive management meetings to discuss their findings and make recommendations for next year's priorities. To aid in the discussion the project managers were joined by scientists, technologists, planners and administrators from across the portfolio of MDBC partners. The more than 50 people in attendance contributed to the end result of a validated list of at sea restoration priorities for 2024.

Ocean Exploration Cooperative Institute MDBC projects span autonomous systems to re-establishing deep sea coral communities. A showcase project for 2024 is the first deployment of a large deep sea lander developed by Dr. Andrew Davies. The lander is designed for a year-long deployment near these sensitive communities measuring environmental conditions to better understand and predict their survival. More information about this exciting project can be found [here](#).

Realtime Underwater Modeling and Immersion

The Realtime Underwater Modeling and Immersion (RUMI) project is in full swing! Over the past few months we've processed the data generated by OET's new [Widefield Camera Array](#).

The goal of the project is to develop an automated data processing pipeline that integrates ROV sensors, bathymetry, video and stills into an interactive and explorable 3D environment. Our first months of the RUMI project focused on evaluating and refining the procedures implemented on EV *Nautilus* during expedition NA156 "Exploration Through Advanced Imaging" funded by the Office of Naval Research. The team has focused on fusing ROV-based multibeam data and the 3D photogrammetric models generated from the Widefield Camera Array, and developing an Unreal Engine-based simulation world that displays these data in 3D space.

We have the bones of the simulator completed, based around dive H2021 which visited a stunning coral community off the coast of Hawai'i. We've implemented a framework to visualize the ROV trackline and all associated sensor data on a per-second basis. High-resolution models of landscape-scale reef features are explorable via a ROV Hercules simulator, and bathymetry data (Ship-based, USV DriX, and NORBIT) are integrated into a fully georeferenced virtual world.

The coming months will remain busy as we further refine elements of data workflow and quality. These are the fun parts - tackling integration of video streams, species ID annotations, SeaLog and a phylogenetic tree taxonomic discovery widget that helps visualize encounter biodiversity across two different dives. Stay tuned for more!

NOAA Ocean Exploration - Job Posting

We are excited to share that UCAR is hiring for an Associate Scientist III - Mapping Technician role supporting major components of NOAA Ocean Exploration's (OER) mission to conduct multidisciplinary scientific expeditions. This position will sail on ~2-4 expeditions/yr for a total of 60-120 days at sea and conduct interdisciplinary shore projects that support improving public mapping and Remotely Operated Vehicle (ROV) data collection and submission to the archive.

This position has a fully remote option. Please see the [posting](#) for more details!



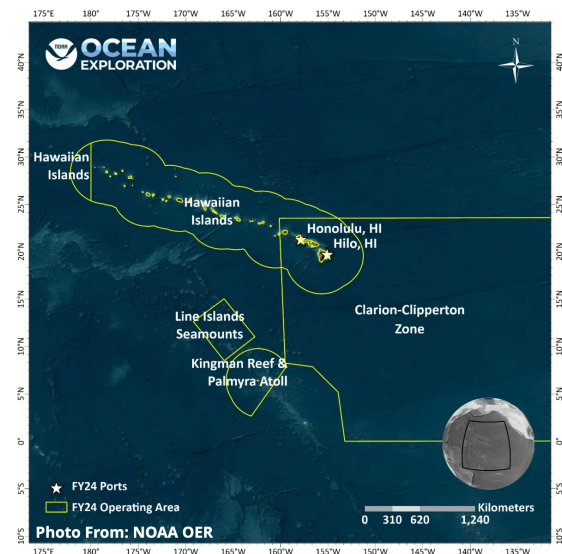
NOAAs Ocean Exploration's 2023 Annual Report

NOAA's 2023 Annual Report has been published! [Take a look](#) to see what happened in the world of ocean exploration in 2023.

Call for Input: NOAA Ship Okeanos Explorer 2024 Hawai'i, Line Islands, and Clarion Clipperton Zone Expeditions

As part of their community-driven exploration model, NOAA Ocean Exploration invites you to submit exploration recommendations for [mapping](#) and [remotely operated vehicle \(ROV\)](#) operations for Fiscal Year (FY) 2024 on NOAA Ship Okeanos Explorer off of the Hawaiian Islands.

The deadline for submission is March, 15th. Find more information on submissions [here](#).



The Importance of Archiving the Seafloor

Individuals are encouraged to review [this recent article](#) published in *Eos*. The article elucidates the importance of sea floor sediment samples in helping us further understand our oceans.



2024 (virtual) OECI Blue Economy Career Exploration Fair

For a third year, the OECI will again host a virtual **Blue Economy (BE) Career Exploration Fair** as part of its **Bridge to Ocean Exploration (BzOE) Program**. In addition to a broad introduction to BE industries, event participants will be able to speak with a suite of engaging panelists in small groups and ask questions, learn more about skills required for BE positions, and understand the personal career journeys of all panelists.

This year, the OECI is hosting **two virtual events**, one on **Tuesday February 27, and the other on Thursday, February 29, 2024**. Each online event will last approximately 2 hours (2:30-4:30pm ET) and will feature different BE sector representatives. Participants are encouraged to register for both sessions if they can.

Registration is required to participate in this **free, online event**, which is geared toward **undergraduate, graduate, and community college students**. Please follow [this link](#) to register to participate in one or both online sessions.

Please save the date(s) and share details within your networks!

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