

# **“Increasing Accessibility to the Deep Sea Through the Acquisition of a Medium ROV for Regional UNOLS Vessels”**

**Summary of Town Hall at Ocean Sciences Meeting 2024**

# **mROV opinions can be organized into three primary motivators:**

- 1. A new mROV's smaller size would be an advantage.**
- 2. A new ROV would provide the opportunity to design a vehicle with perhaps some different elements than ROV Jason (Regardless of size).**
- 3. A new ROV would improve overall vehicle availability/capacity (Regardless of size)**

# 1. How would the smaller size of the proposed mROV be an advantage?

- Conducting "bounce dives" for rapid data collection.
- Coordinating with smaller assets for combined operations - made more possible by taking up less deck space?
- Working on small vessels (RCRVs) could mean increased focus on coastal zones and depths <1000 meters.
- Increased participation of and use by early-career researchers shorter, more local/coastal cruises on RCRVs.
- Increased opportunity to collaborate with developing nations in their coastal EEZs on smaller vessels.

## **2. What would the opportunity to design a new ROV (with perhaps some different elements than ROV Jason) allow? (Regardless of size)**

*New mROV could be designed to access habitats/locales that are currently perceived as technically difficult for ROV Jason*

- Steep slope terrain
- Warmer waters (like mesophotic depths)
- Areas with high currents (> 3 knots)
- Small spaces, like shipwrecks
- Ability to work around entanglement hazards
- Polar regions (icepack)
- Expand weather window of operation

### **3. What would increased ROV availability/capacity facilitate? (Regardless of size)**

- More availability could allow revisiting sites over and over again (time-series)
- Better resilience of science to disturbance (e.g., schedule delays due to pandemic shutdowns)
- Increased participation of and use by early-career researchers due to better vehicle availability
- Expanded engineering and operational capacity in the area of sub-mergence vehicles in the US.
- Overall, just more science in all areas!

# What types of tools and capacity does the community want for the mROV?

**General:** 1-2 manipulator arms with 7-function; USBL; modular, spacious sled; bumper and wall anchors for vertical work; **make it pink, rainbow, or glitter;** cross-decking with other vehicles; low noise; ability to work in steep terrain; ability to handle currents >3 knots; non-Western mythology name

**Sampling:** bioboxes; push cores; Niskins, suction sampler; integrated fluid pumping (like Universal Fluid Obtainer); built in eDNA sampler; baited traps; hard rock sampling

**Lighting:** multifrequency lighting; “good” lights that are modular and adjustable

**Visual:** 4K cameras; science still camera; stereocamera for 3D photogrammetry

**Sensors:** pH/DO/Fluor CTD; Multibeam; Lidar

**Telepresence**

**Personnel:** experienced operators and pilots