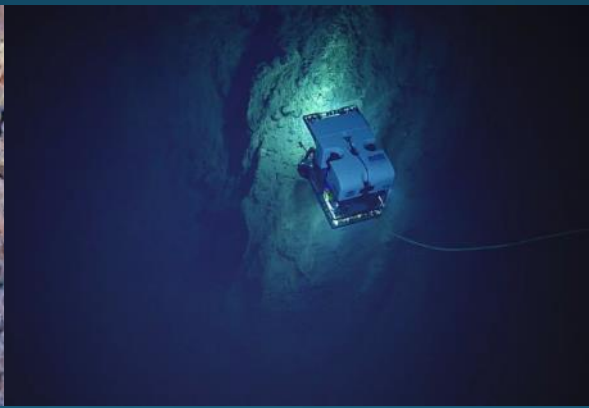




Global Foundation for Ocean Exploration

Mystic, CT USA

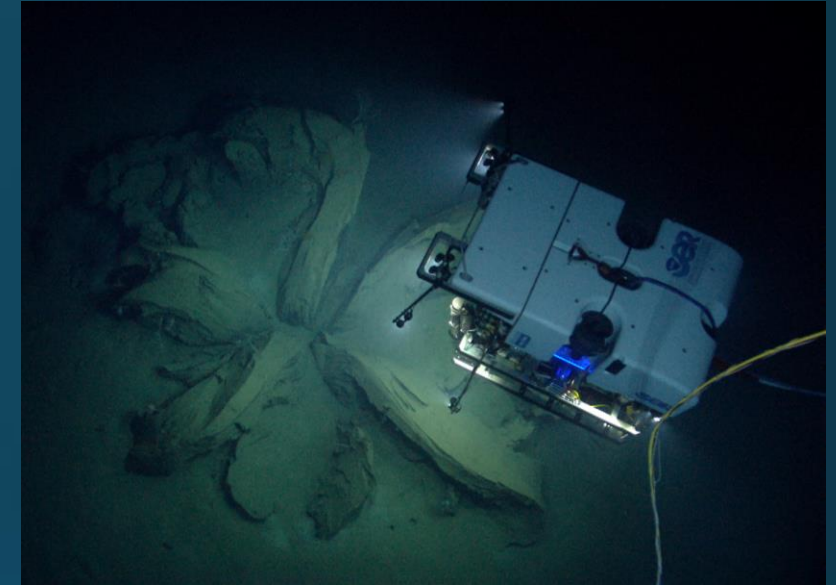


Images: NOAA OER

Dave Lovalvo, President
Melissa Ryan, Vice President

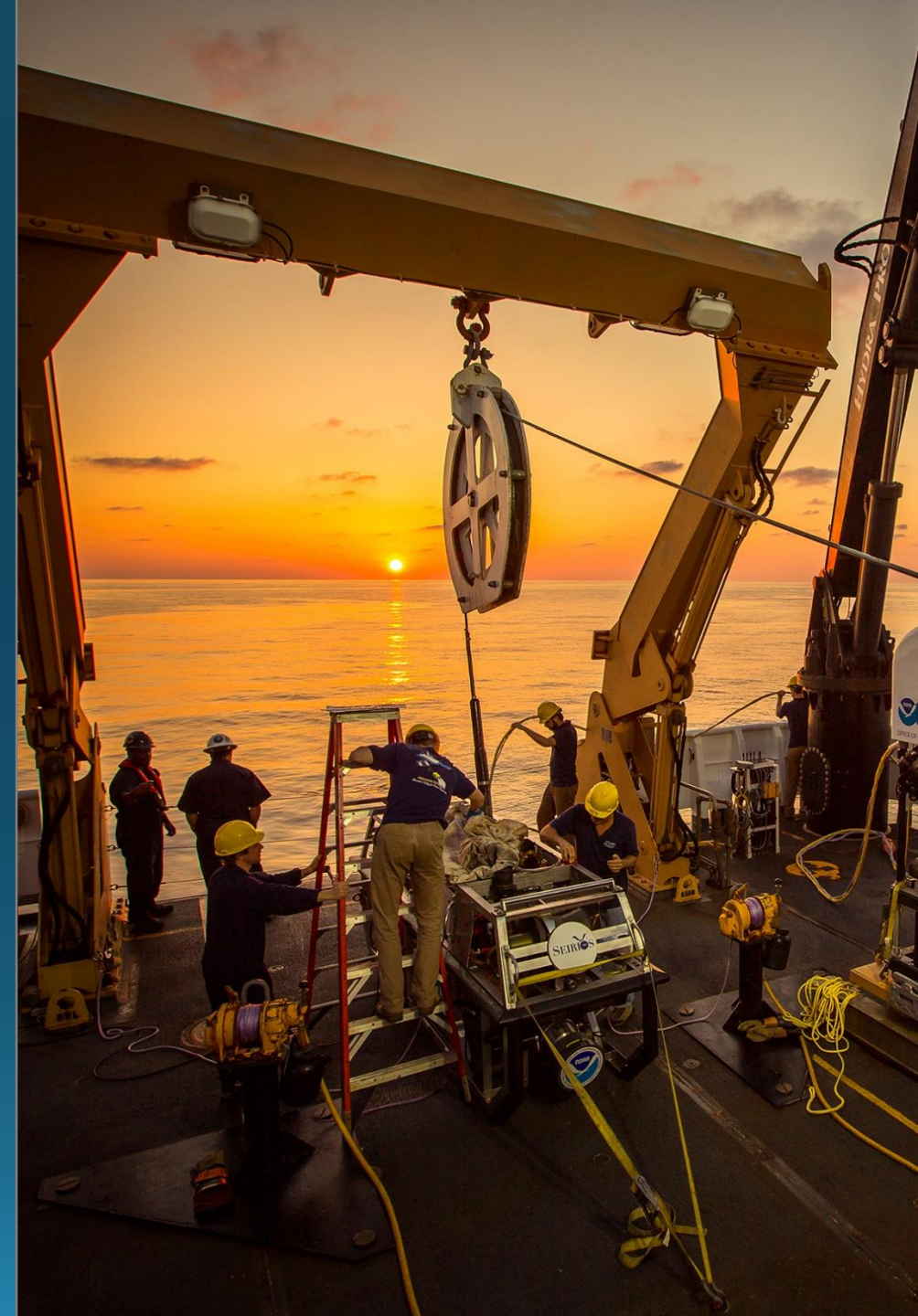
Mission

- Identify and support engineering innovation in underwater robotic technology
- Train, nurture, and employ the engineers that will design and operate the technology of tomorrow
- Tell the story of ocean exploration and discovery



How?

- Assess the future technology needs that will allow us to explore the deep ocean
- Attract the brightest engineers and scientists to design, build, and operate these technologies
- Provide opportunities for real world experience and application through training and mentoring, both shoreside and at sea
- Create and promote career paths that allow them to dedicate their expertise to the ocean sciences



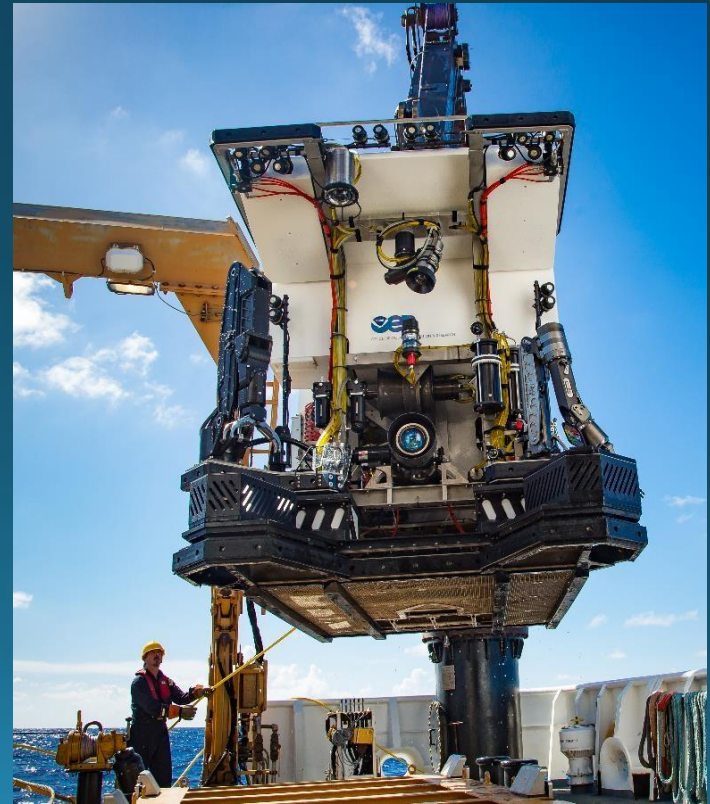
Formal Partner with NOAA's Office of Ocean Exploration and Research

- GFOE manages all deep submergence operations
- NOAA Ship *Okeanos Explorer*
- Only federal ship dedicated to exploration



ROV System Seirios and Deep Discoverer

- Dual body system
- Rated for 6,000 meters
- 250,000 lumens LED's
- 12 cameras (4 HD)
- Dual frequency scanning sonars
- CTD's and other sensors



Deep Discoverer (D2)

- **Size:** ~10'L x 6.5'W x 8.5'H
- **Air weight:** 9150 lbs
- **Max Payload:** 400 lbs. (in water weight)

Hydraulic 7-Function Manipulators:

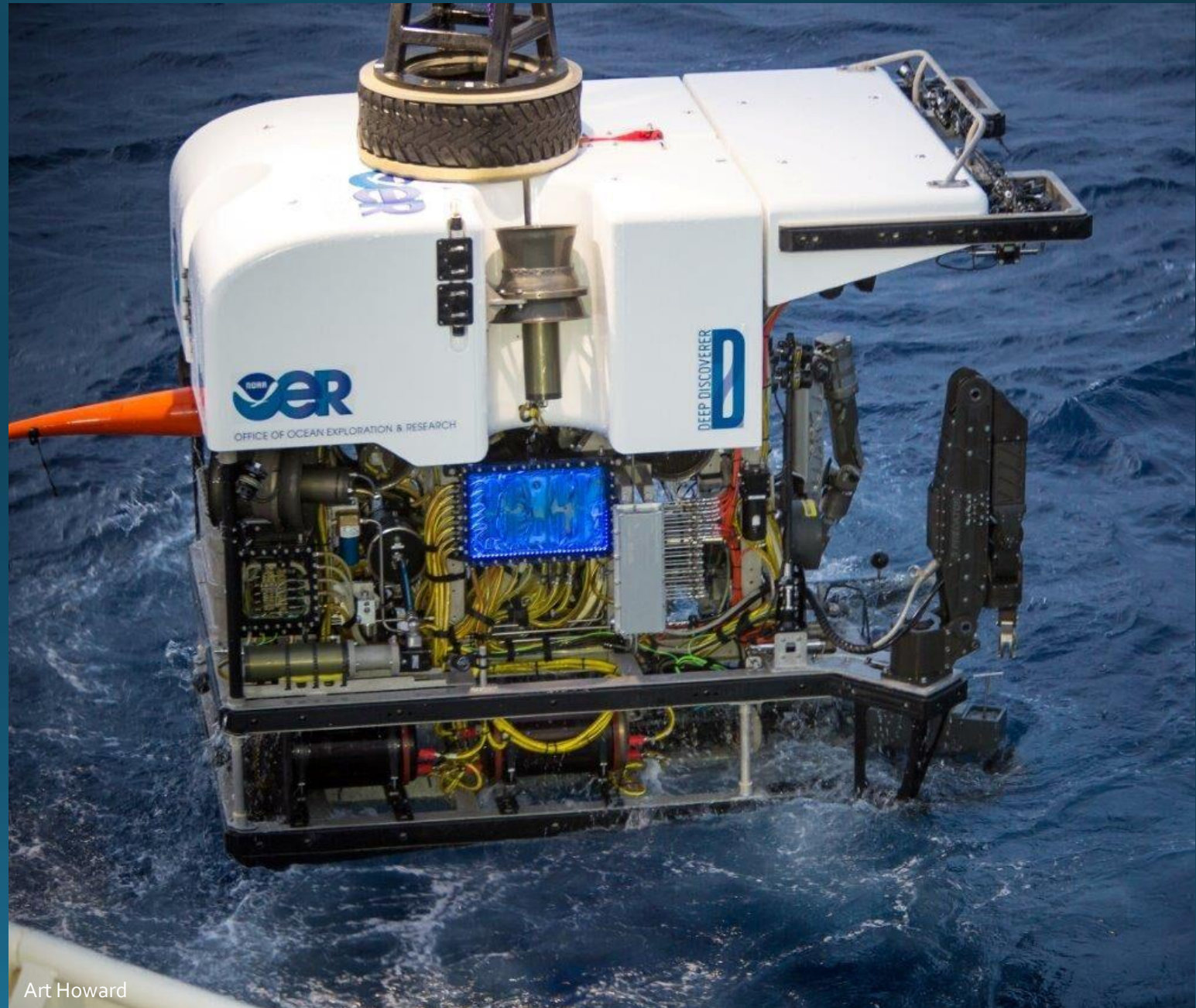
- Shilling "Orion"
- Kraft "Predator" w/Force Feedback

Lighting:

- 150,000 lumens LEDs
- 8 LEDs on hydraulic swing arms

Video:

- Insite Pacific "Zeus Plus" HD
- Insite Pacific "Mini Zeus" HD
- Insite Pacific "Titan Plus" HD
- Kongsberg Tilt/Rotate SD
- (3) Insite Pacific Aurora SD

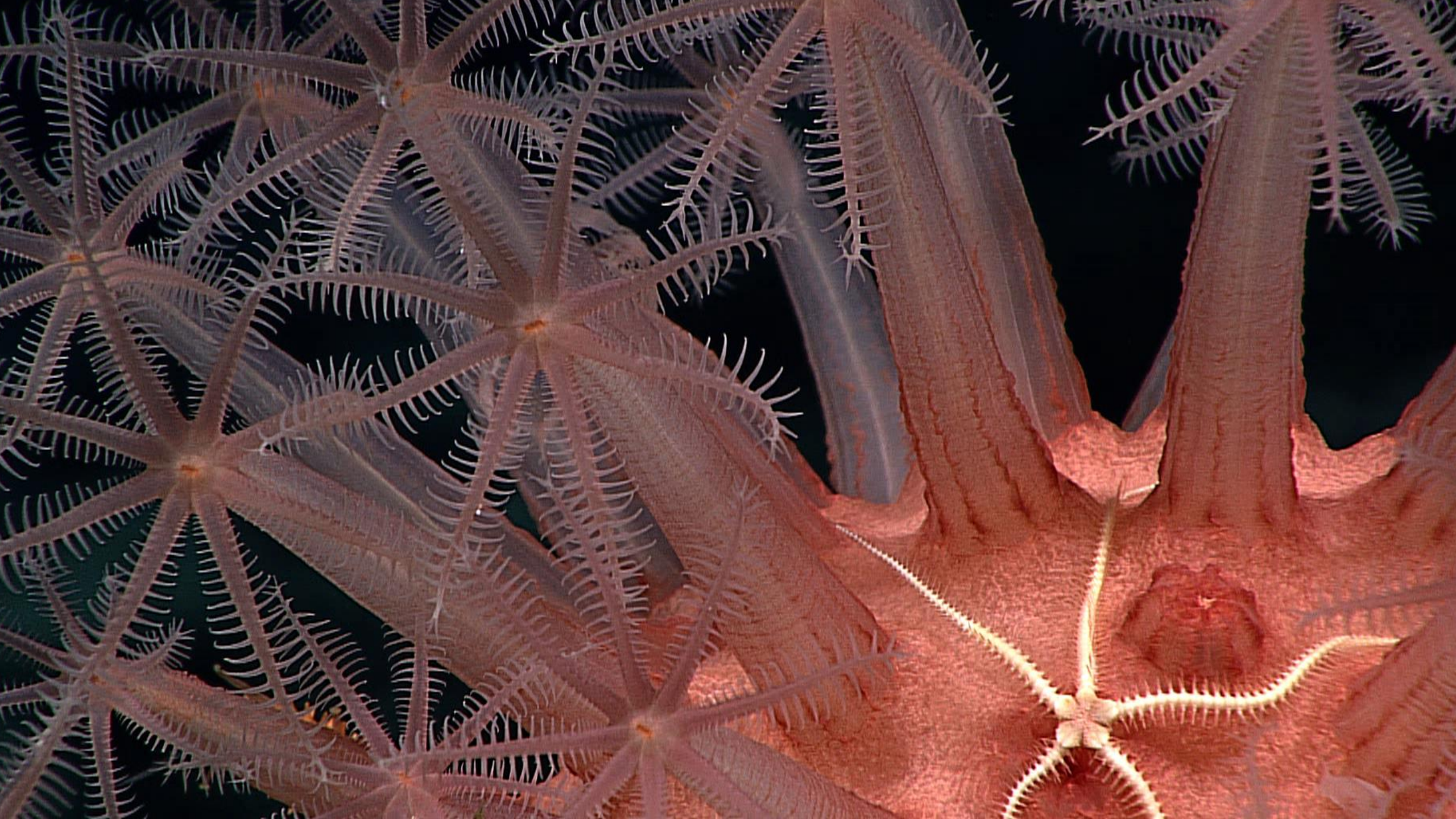


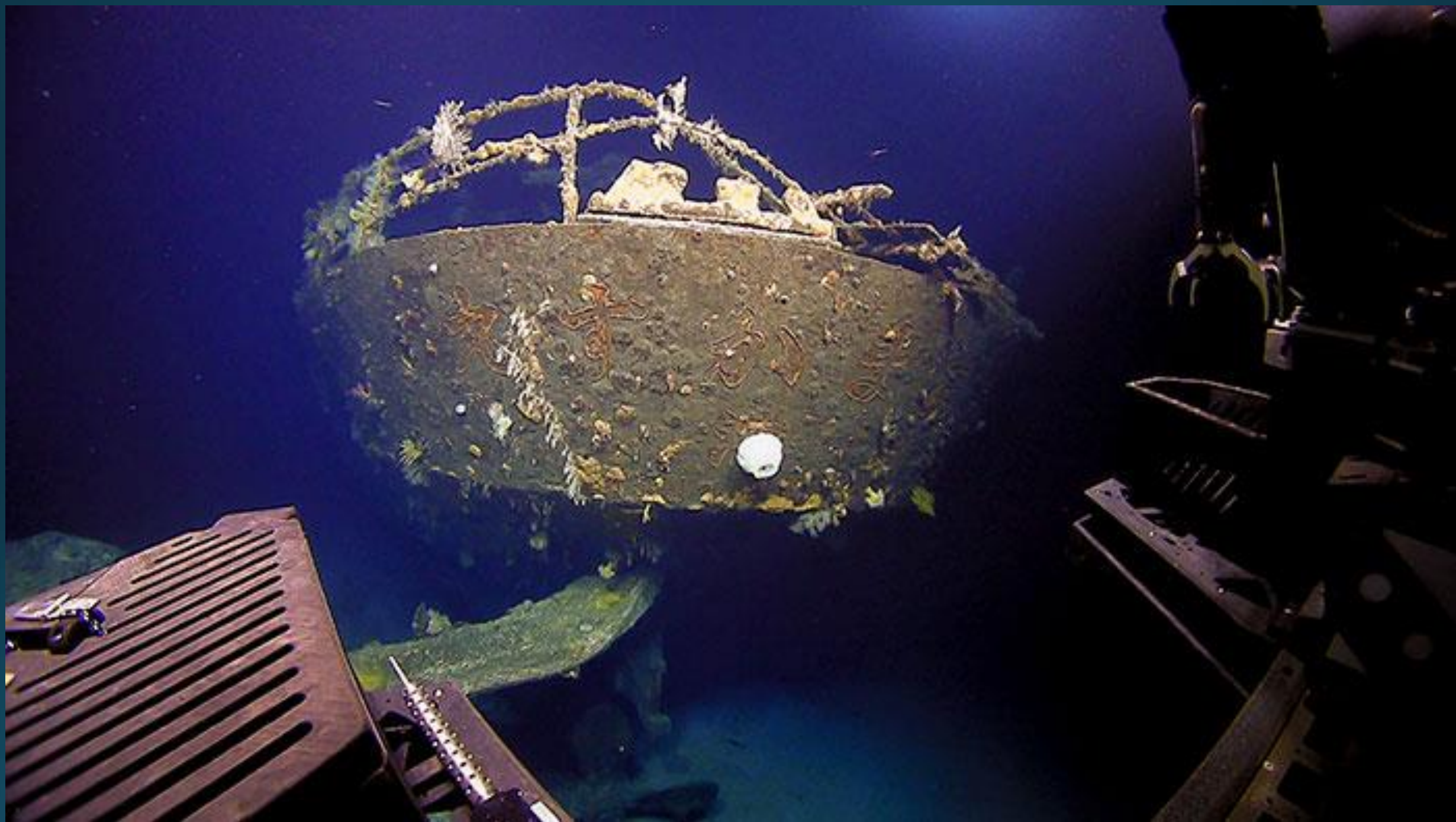
Art Howard



Only 2 scientists on the ship!







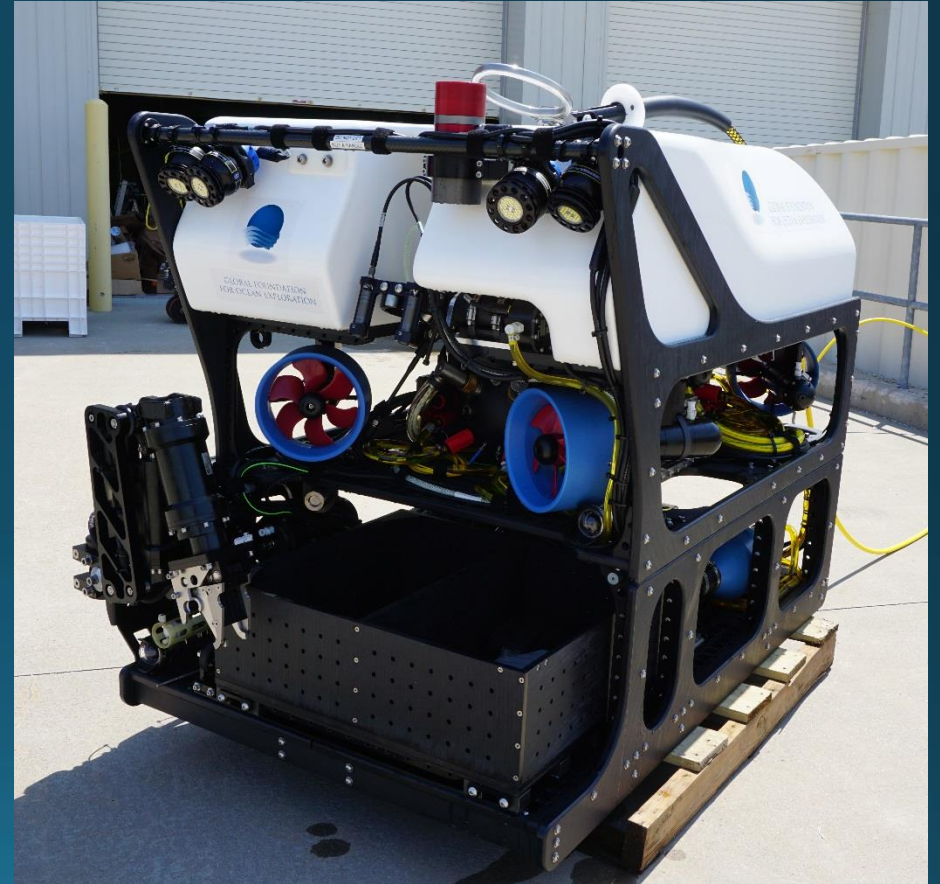


Telling the Story...



YOGI - 1500 m Rated ROV

- For shallower applications that require advanced sensor deployment capability and modest physical sampling
- Dimensions: 3ft x 3ft x 4.5ft
- Weight: 1,100lbs (scientific payload of up to 120lbs)
- Thrusters: 4 axial, 2 vertical
- Multiple high-definition cameras
- 5-function electric manipulator for sample collection
- Suction sampler for sediment and biological material
- Temperature sensor
- Water sampler for collecting hydrothermal fluids
- Chemical sensors for analyzing composition of hydrothermal fluids
- 130-color sonar
- Acoustic navigation system
- Expandability for the addition of cameras and sensors



12-meter Research Vessel *Annie*

- Dynamic positioning – no need for anchoring
- ROV / Vessel control sync
- Remote locations - built to airlift by heavy lift helicopter
- Deployable from larger vessels – allows for simultaneous ops

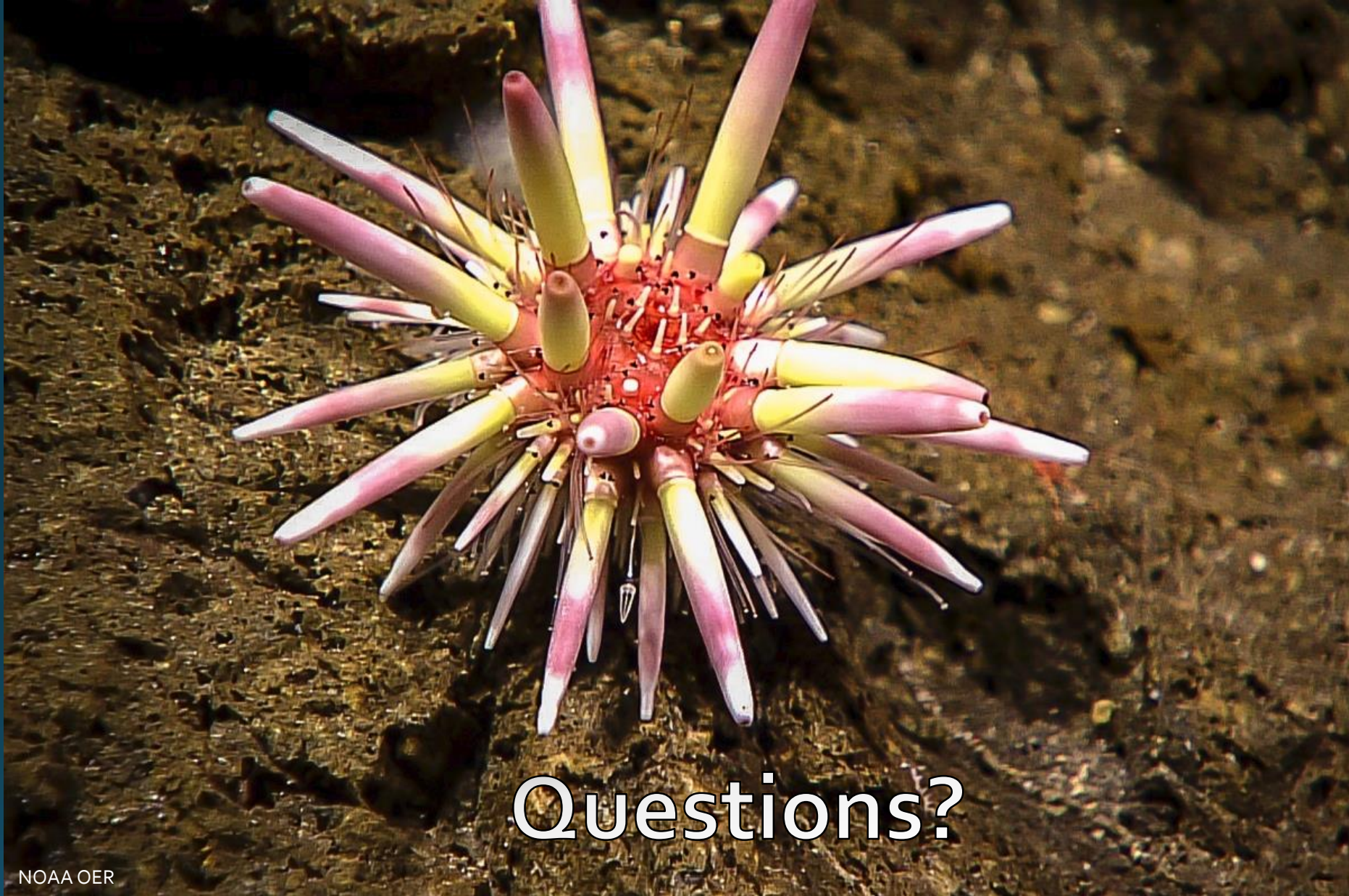


RV *Annie's* Interior



Control Room on *Annie*





NOAA OER

Engineeringfordiscovery.org

Our Vision

Create a worldwide, world-class underwater exploration program.

