UNOLS News

Exciting updates from UNOLS & the Academic Research Fleet

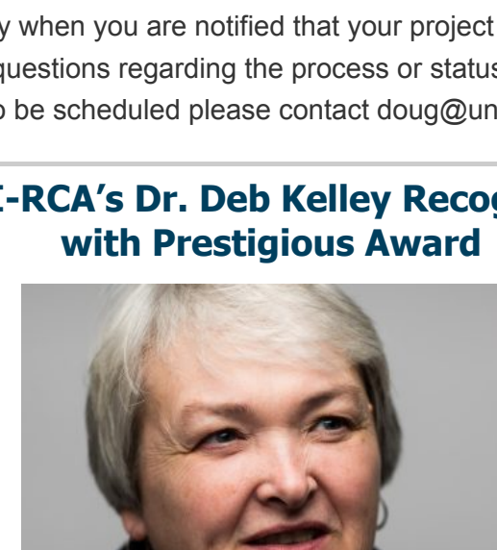
April 2026 - Volume 40, No. 2

Community Updates

2027 Ship Scheduling Update

The UNOLS ship schedulers are working on the framework for the 2027 Global and Ocean Class ship schedules. Virtual 2027 Ship Scheduling Kick Off Meetings were held in March during which the Federal agencies, plus the major science programs (i.e. GO-SHIP, OOI) and facilities (i.e. NDSF, ODF), provided their priorities, concerns and science needs for CY 2027. The schedulers are now working with those priorities, a backlog of previously deferred projects, and ship operational needs (i.e. drydocks, major maintenance, inspections) to develop the schedules that will most efficiently and effectively balance all the needs. Shiptime funding unknowns will also surely play a role in shaping the scheduling process as the 2027 Federal funding process proceeds along. The goal of the ship schedulers and the process, as is normally the case, is to post "published" 2027 schedules no later than this coming September. Generally, the Global and Ocean Class ship schedulers work to have the basic framework of the next year's schedules figured out by late spring / early summer allowing the summertime to be focused on ironing out all the fine details of the schedules with the Principal Investigators, the Major Facilities, and the Ship Operators. Principal Investigators are reminded to update the funding status for their Shiptime and Marine Equipment (SME) requests in MFP when it changes – especially when you are notified that your project is funded. For any questions regarding the process or status of a project waiting to be scheduled please contact doug@unols.org.

OOI-RCA's Dr. Deb Kelley Recognized with Prestigious Award



UW's Dr. Deborah Kelley, Director of the OOI Regional Cabled Array and a frequent user of the ARF ships and NDSF facilities (ALVIN & JASON), was recently honored by The Oceanography Society with the 2026 Wallace S. Broecker Medal. The award recognized her long distinguished career filled with many significant contributions to marine geoscience and chemical oceanography, leadership in interdisciplinary and collaborative research, and her sustained commitment to education and mentorship. The award was presented to Dr. Kelley at the recent Ocean Sciences Meeting in Glasgow, Scotland.
You can read all about it here.
Congratulations Deb!

Update from NSF's RCRV Project

Written by Kristin Beem and Clare Reimers

Regional Class Research Vessel construction continues at Bollinger Houma Shipyard in Louisiana. There has been major progress in recent months in installations of components of the integrated acoustic systems of the vessels that include multibeam sonars (EM 304 and EM 2040), acoustic doppler current profilers (Sentinel V 300 kHz, Ocean Surveyor 75 kHz), a scientific echosounder (Airmar CS229 12 kHz) , a fisheries sonar suite (EK80), sub-bottom profiler (TOPAS PS18), heading, altitude & positioning systems (Seapath), and acoustic noise monitoring systems. On R/V *Taani* all water-side components are installed, and dry-side cables were recently cut, routed, and terminated within the transceiver room (photo 1).

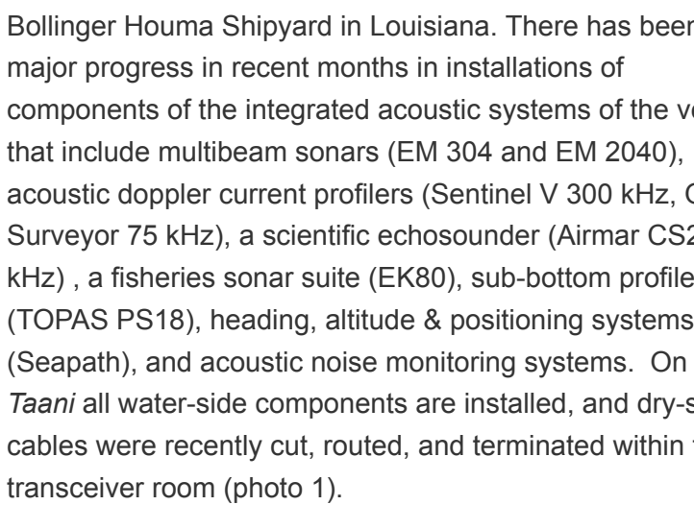


Photo 1. Image of EM 304 TX and TOPAS cables routed in the transceiver room of R/V *Taani*.
Photo Credit: Kristin Beem and Clare Reimers

On *R/V Narragansett Dawn,* the sonar flat is being prepared for wet-side installations of sonars and hull-painting later this Spring (photo 2) prior to launch. Sonar flat installations for R/V *Gilbert R. Mason* are not far behind those of *Narragansett Dawn*. The first science trials cruises of each vessel will focus on deep-water sonar testing, calibration and noise assessments.

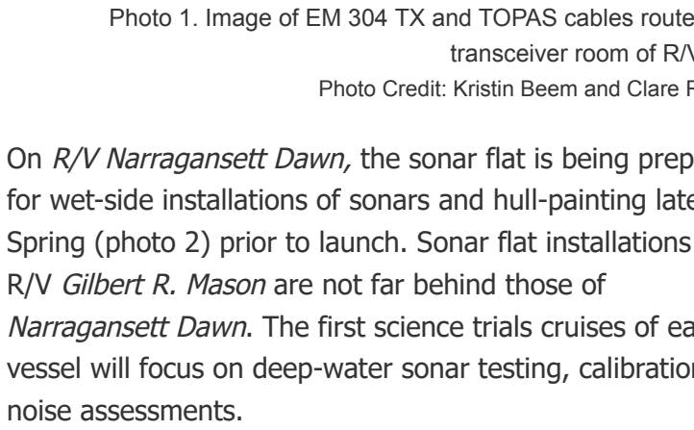


Photo 2. Image of sonar flat boxes for the deepwater multibeam system (EM 304), sub-bottom profiler (TOPAS), and fisheries sonar (EK-80) of R/V *Narragansett Dawn*.
Photo Credit: Kristin Beem and Clare Reimers

2026 UNOLS-MATE Marine Technical Internship Program Updates!

The 2026 UNOLS-MATE Internship Program is underway with the following two new short-term interns and one long-term intern currently providing essential technical support for the US Academic Research Fleet (ARF) while at sea, in the shipyard, and in land-based supporting facilities.

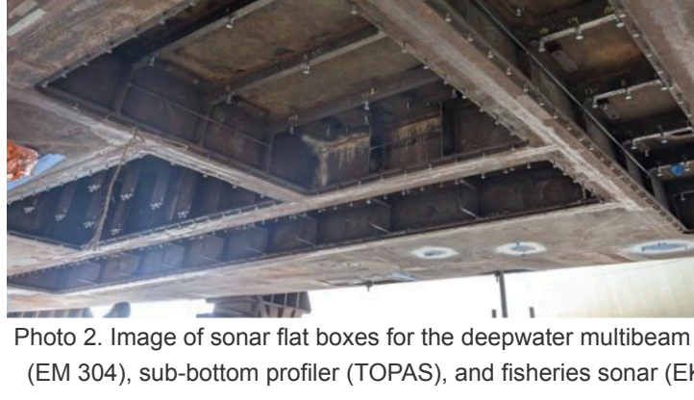


Photo (from left to right): Conrado Alejandro Acevedo Batiz, Paige FitzPatrick, Ken Csukas

Hosted by the Lamont-Doherty Earth Observatory at Columbia University and mentored by Lead Technician Cody Bahlau, *Conrado Alejandro Acevedo Batiz* is currently on board the R/V *Marcus G. Langseth* helping the Marine Technical Team prepare the ship for upcoming science expeditions. During a transit from San Diego, CA to Majuro, Marshall Islands, Conrado will assist with the maintenance, troubleshooting and testing of shipboard equipment and instruments for conducting collaborative physical and chemical oceanographic research.

Paige FitzPatrick is currently on board the R/V *Sikuliaq* hosted by the University of Alaska, Fairbanks. She is working with Mentor and Marine Technician Carmen Greto during the drydock period while learning all about the inner workings of the research vessel. While in the shipyard, Paige is assisting the Marine Technical Crew with an overhaul, completing several repairs and installations of new oceanographic instruments and systems. Once all upgrades are completed, she will participate in the R/V *Sikuliaq* Acoustics Calibration cruise to ensure the new systems are fully functional after installation.

This year's long-term intern is *Ken Csukas* who has been assisting with the HOV Alvin overhaul at the Woods Hole Oceanographic Institution (WHOI) since last November. Ken's primary Mentor is Engineer-Pilot Kaitlyn Beardshear, also a former MATE Intern. Ken has been working with Engineers, Technicians and other team members at WHOI's National Deep Submergence Facility providing land-based technical support while completing extensive repairs, upgrades and installations to the Alvin Submersible.

All three are on their way to developing promising careers in oceanographic research. To learn more about the interns and the technical details of their daily tasks, visit the *Marine Technical Internship Blog*!

Committee News

AMRCC Completes Report

The UNOLS Special Committee - the Arctic Marine Research Capabilities Committee (AMRCC) recently completed their tasking with the submission of their report to the U.S. Coast Guard.

The AMRCC was created in 2024 and charged with the review and refresh of science missions and associated science mission requirements for future federal icebreakers operating in the Arctic Ocean and other northern polar regions to meet the needs of the science community for the next 30 years. The report can be found here.

During its work the AMRCC met in person twice, held three public meetings, conducted a survey of Polar scientists, and met virtually numerous times to facilitate the development of their comprehensive report.

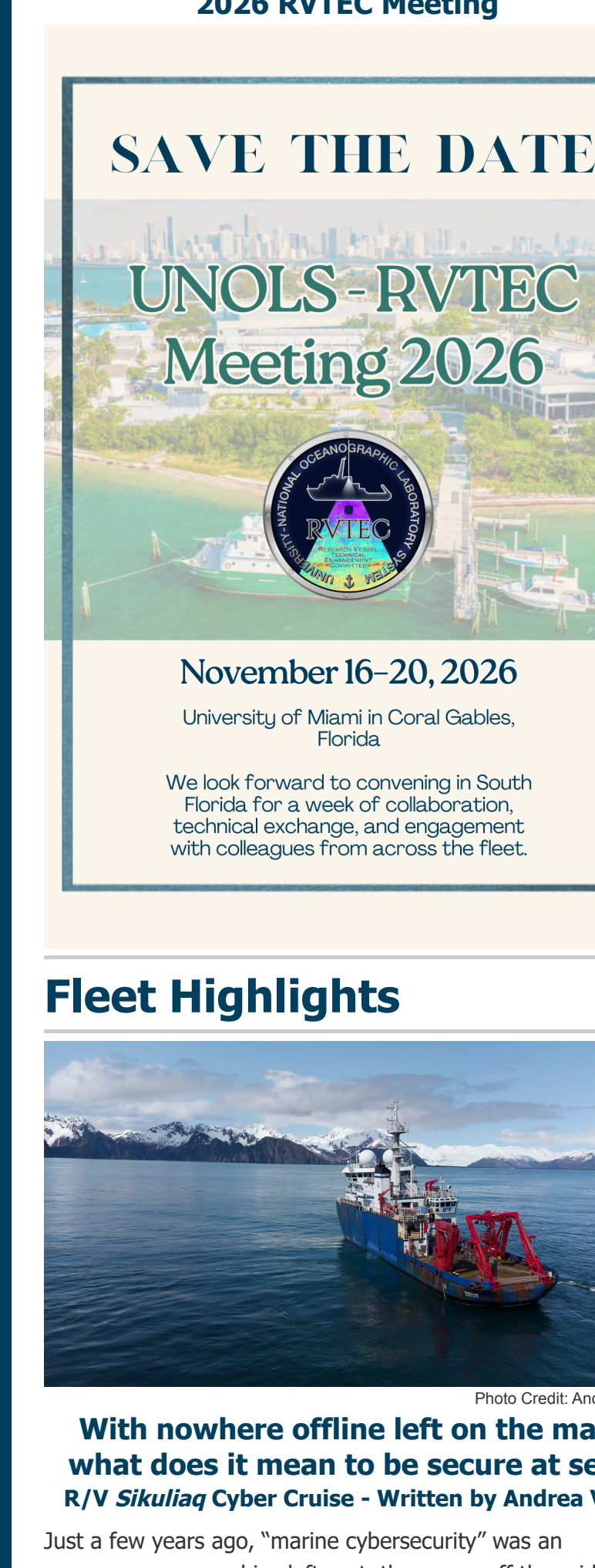
This important work will help the U.S. Coast Guard as it continues to operate USCGC *Healy* and develops plans for adding science support capabilities to the recently acquired USCGC *Storis* and the future Arctic Security Cutters that are now under two different design and construction contracts.

Congratulations to the AMRCC on a job well done!

REPORT OF THE
ARCTIC MARINE RESEARCH CAPABILITIES COMMITTEE
A UNOLS SPECIAL COMMITTEE

ON THE FRONT COVER: USCGC *Healy* in the ice with scientists working in the foreground.
Photo credit: David Forcucci

2026 RVTEC Meeting



SAVE THE DATE
UNOLS RVTEC Meeting 2026
November 16–20, 2026
University of Miami in Coral Gables, Florida
We look forward to convening in South Florida for a week of collaboration, technical exchange, and engagement with colleagues from across the fleet.

Fleet Highlights

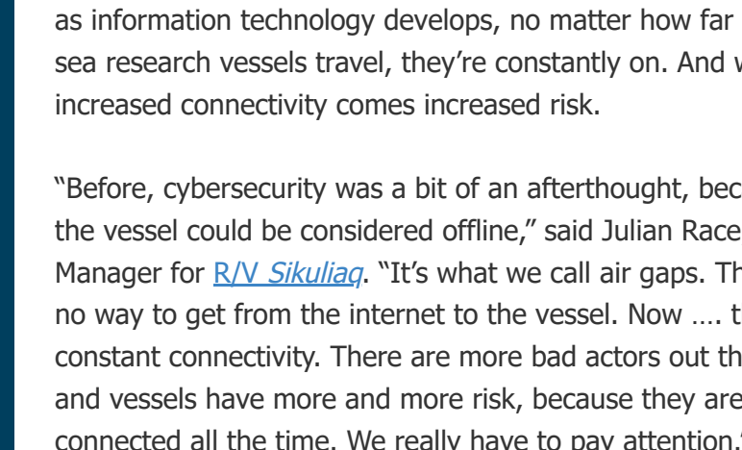


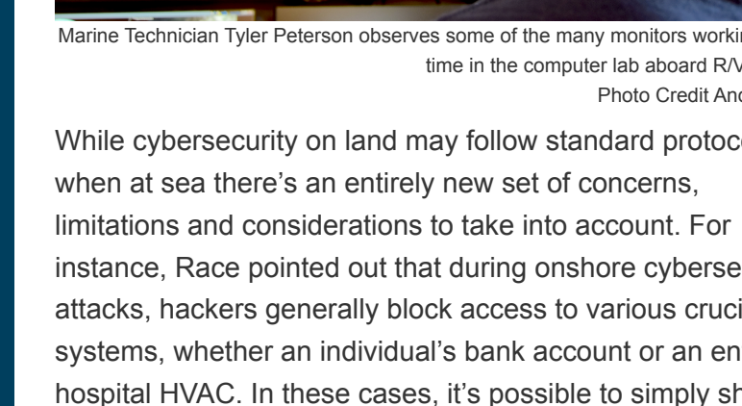
Photo Credit: Andrea Vale

With nowhere offline left on the map, what does it mean to be secure at sea?

R/V *Sikuliaq* Cyber Cruise - Written by Andrea Vale

Just a few years ago, "marine cybersecurity" was an oxymoron — once ships left port, they were off the grid. But as information technology develops, no matter how far out to sea research vessels travel, they're constantly on. And with increased connectivity comes increased risk.

"Before, cybersecurity was a bit of an afterthought, because the vessel could be considered offline," said Julian Race, IT Manager for R/V *Sikuliaq*. "It's what we call air gaps. There's no way to get from the internet to the vessel. Now …. there's constant connectivity. There are more bad actors out there, and vessels have more and more risk, because they are connected all the time. We really have to pay attention."



Marine Technician Tyler Peterson observes some of the many monitors working in real time in the computer lab aboard R/V *Sikuliaq*
Photo Credit Andrea Vale

While cybersecurity on land may follow standard protocols, when at sea there's an entirely new set of concerns, limitations and considerations to take into account. For instance, Race pointed out that during onshore cybersecurity attacks, hackers generally block access to various crucial systems, whether an individual's bank account or an entire hospital HVAC. In these cases, it's possible to simply shut down the threatened system and bring operations to a halt to prevent further damage. But at sea, that's not exactly an option.

"These days, more and more vessels are becoming computer controlled," Race described. "So if an attacker were to target a ship and potentially gain control or shut down critical systems, the vessel could be, as we say, 'dead in the water.' It is not out of the realm of possibility that an attacker could literally drive a ship off course and cause an accident or run her aground. So cybersecurity at sea is really important because it's not just monetary loss that you might experience. It could be loss of life, loss of property, damage to critical infrastructure."

Race, who oversees all cyber systems in use aboard R/V *Sikuliaq's* research operations, noticed that *Sikuliaq's* "transit" cruises — which are usually void of science parties, and simply aimed at getting the ship from one port to another quickly — left valuable berth and lab space open. He had the idea to use these transit periods as opportunities to train professionals in a variety of maritime skills.

That's how the Sea-based Education for Advanced Cybersecurity Understanding and Research Experiences in IT (SECURE-IT) came to be. From April 9-20, *Sikuliaq* hosted the second iteration of a training cruise focused specifically on exploring the unique challenges and opportunities of the rapidly-developing marine cybersecurity field. While *Sikuliaq* made its way from Honolulu, Hawaii, to its home port of Seward, Alaska, 22 professionals across the IT and marine technology fields joined together to share ideas and learn from one another.

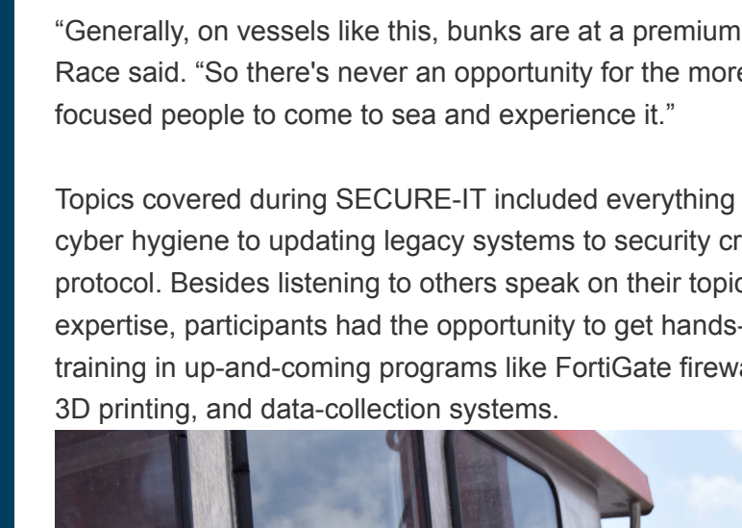
Melissa Gonsalves, Lead Information Technologist for R/V *Endeavor*, and Vishal Singh Bhardvaj, a security analyst at OmniSOC, discuss how to build a FortiGate system for R/V *Sikuliaq*.
Photo Credit Andrea Vale

"My goal was to try and fill the boat with people who don't normally get to go to sea, and really understand what it takes to run a modern research vessel out at sea," Race said.

It was particularly important to give IT professionals who support vessel operations, but who don't typically get the opportunity to sail, the ability to go out to sea and better understand the challenges faced offshore. That hands-on experience can illuminate why policies that work at onshore institutions may not translate well to offshore research vessels (for instance, Cloud-based programs aren't nearly as helpful at sea, where it is difficult to connect to Cloud systems.)

"Generally, on vessels like this, bunks are at a premium," Race said. "So there's never an opportunity for the more IT-focused people to come to sea and experience it."

Topics covered during SECURE-IT included everything from cyber hygiene to updating legacy systems to security crisis protocol. Besides listening to others speak on their topics of expertise, participants had the opportunity to get hands-on training in up-and-coming programs like FortiGate firewalls, 3D printing, and data-collection systems.



There is a unique set of cybersecurity concerns while aboard a research vessel at sea that may not apply back on land.
Photo Credit Andrea Vale

There was also an emphasis on giving students and early career professionals the opportunity to broaden their understanding of what an IT career can encompass, and introduce them to possibilities of working at sea. The cruise hosted five STEMSEAS students — all studying in the cyber field — as well as a UNOLS-MATE intern.

"We've brought along some undergraduate students to try and encourage them to see that there are more opportunities than just sitting in a cubicle," Race said. "Be open to different experiences … There are a lot of opportunities that maybe aren't obvious."

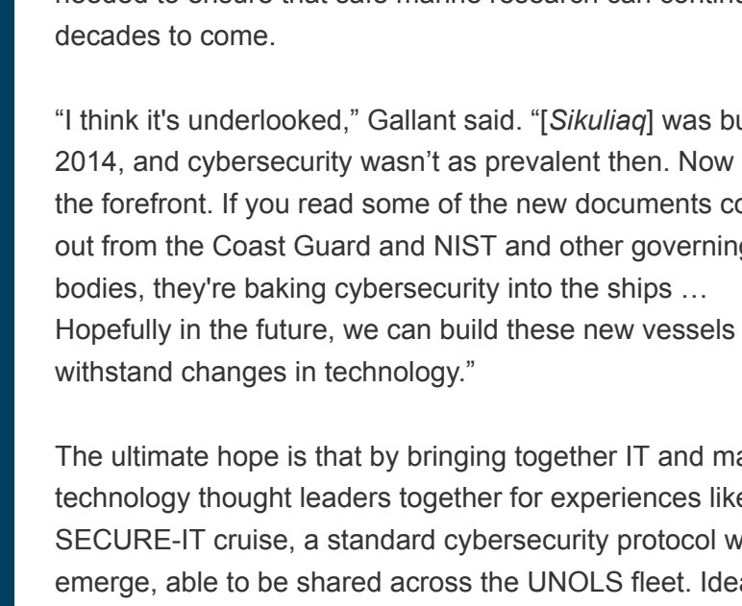
UNOLS-MATE intern Raymond James Gallant is now rethinking the possibilities for his future based on his experiences during the SECURE-IT cruise. He is an Information Systems major approaching his senior year at Eastern New Mexico University, with plans to pursue graduate studies. While he has studied cybersecurity in school, being able to apply it in a hands-on experience at sea is crucial, especially because "You don't have a day-to-day use for [these tools] anywhere else in the world," Gallant said.

The SECURE-IT cruise has shown students like Gallant that an IT career spent at sea is not only possible, but increasingly needed to ensure that safe marine research can continue for decades to come.

"I think it's underlooked," Gallant said. "[*Sikuliaq*] was built in 2014, and cybersecurity wasn't as prevalent then. Now it's at the forefront. If you read some of the new documents coming out from the Coast Guard and NIST and other governing bodies, they're baking cybersecurity into the ships … Hopefully in the future, we can build these new vessels to withstand changes in technology."

The ultimate hope is that by bringing together IT and marine technology thought leaders together for experiences like the SECURE-IT cruise, a standard cybersecurity protocol will emerge, able to be shared across the UNOLS fleet. Ideally, roving science parties and marine technicians that work between multiple vessels would have a similar IT infrastructure to work with, making their work easier — and minimizing cyber threats along the way.

"Our goal with this project … is to make it a more unified experience from vessel to vessel, so that the learning curve is much shallower," Race said. "That's just better for everyone all around."



As offshore connectivity methods continue to expand, participants of the SECURE-IT cruise now have the framework to solve key issues of cybersecurity at sea.
Photo Credit Andrea Vale

A 4-D Seismic Experiment on the East Pacific Rise

R/V *Marcus G. Langseth* Cruise MGL2602
Chief Scientist: Ross Parnell-Turner (SIO); Co-Chief Scientists J.Pablo Canales (WHOI) & Milena Marjanović (CNRS-IPGP)

Volcanoes on land are often in remote locations with harsh terrain, making their study challenging. In the oceans by contrast, collecting high resolution and spatially extensive geophysical datasets is more tractable, offering the possibility to investigate mid-ocean ridge volcanic systems using seismic imaging. This study focuses on the volcanically-active East Pacific Rise near 9°50'N, which erupted in 1991–92, 2005–06, and most recently in April 2025. The main objective for cruise MGL2602 was to conduct a repeat of the 3D multichannel seismic survey at the 9°50'N segment, acquired during MGL0812 in 2008. This initial survey led to several breakthroughs in understanding the magma systems and crustal structure beneath mid-ocean ridges. Seismic acquisition during cruise MGL2602 was planned to use identical acquisition parameters to those used in 2008 to enable time-lapse analysis using elastic 4-D full-waveform inversion techniques.

The MGL2602 survey was conducted aboard Columbia University's R/V *Marcus G. Langseth* from February 22 to April 4th. We completed 100% of the planned seismic acquisition consisting of 89 primary sail lines (116 lines in total) in the allotted 40 days. The seismic data are of excellent quality and meet our geometry, signal to noise, and fold requirements.

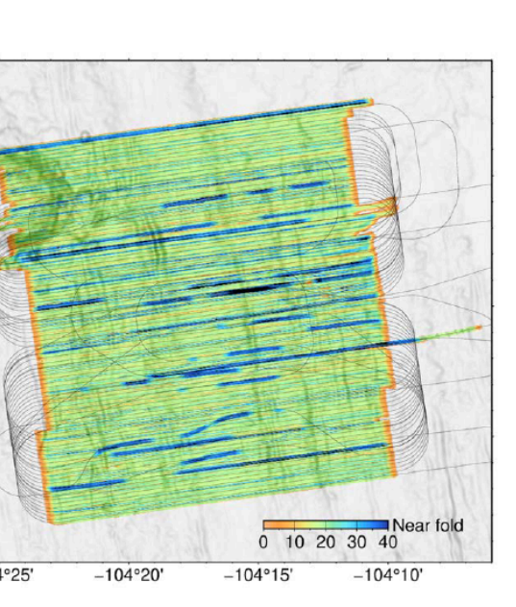
While at sea, we applied a 3-D post-stack time-migration processing flow to a subset of the data from the 2008 and 2026 surveys in the area of the 2025 eruption, resulting in preliminary 3-D cubes with comparable data quality. The forthcoming advanced processing in collaboration with our industry partner will enable the first-ever academic time-lapse 4-D imaging of a submarine volcano.

In addition to collecting the 3-D seismic data, we also collected a high-resolution multibeam bathymetric dataset, which can be combined with pre-eruption mapping data to estimate the extent and volume of the 2025 eruption.

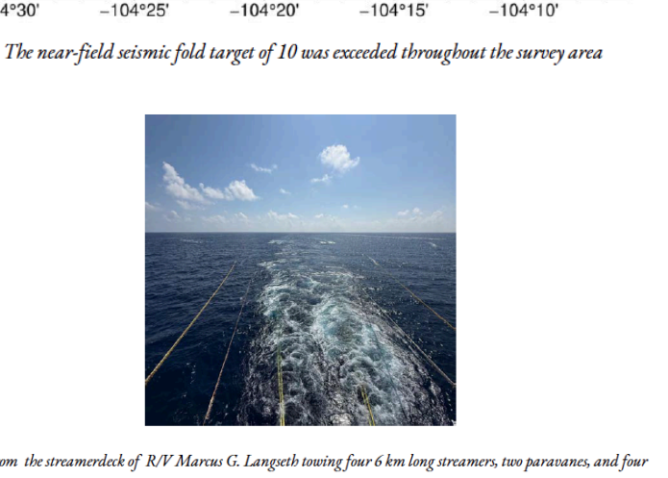
MGL2602 by the numbers:

- ⏱22 days of continuous seismic acquisition
- 🚢2,575 km of survey lines collected
- 🎵68,663 acoustic sources triggered
- 〰 Four 6 km-long streamers towed
- 🎧2,256 recording channels
- 🗺10 m seafloor mapping resolution

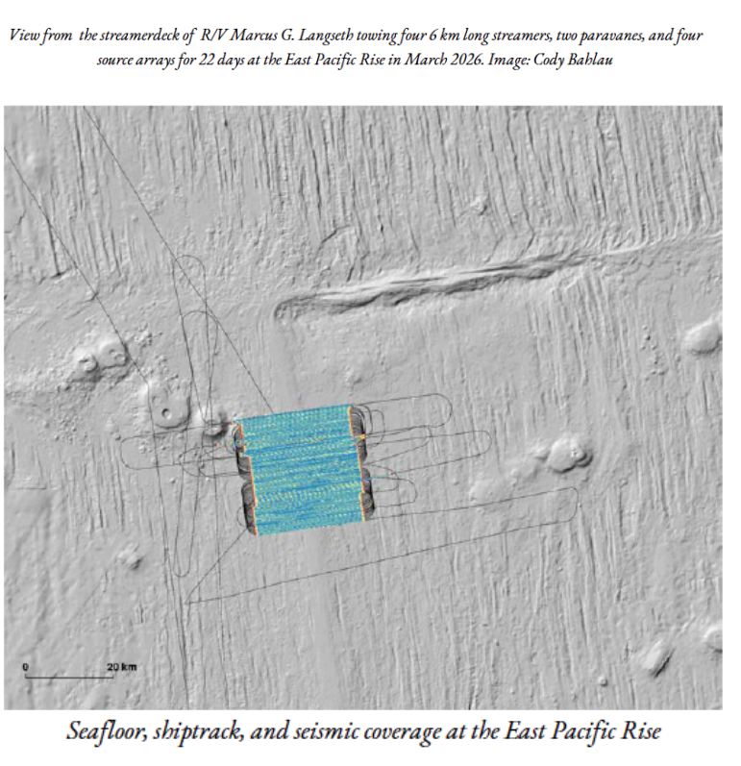
We gratefully acknowledge the relentless hard work and positive attitude of the crew, shipboard technical team, and shore based staff of R/V *Marcus G. Langseth* and of the LDEO Office of Marine Operations, who played a key role in making this expedition a success. We are grateful to Shearwater for providing their Reveal software. This project was supported by U.S. National Science Foundation awards OCE-2427181 (R.P-T.) and OCE-2427182 (J.P.C.).



Data collected during cruise MGL2602: axial magma lens imaged in 3-D, and thickness of lava erupted in 2025 mapped at the East Pacific Rise.

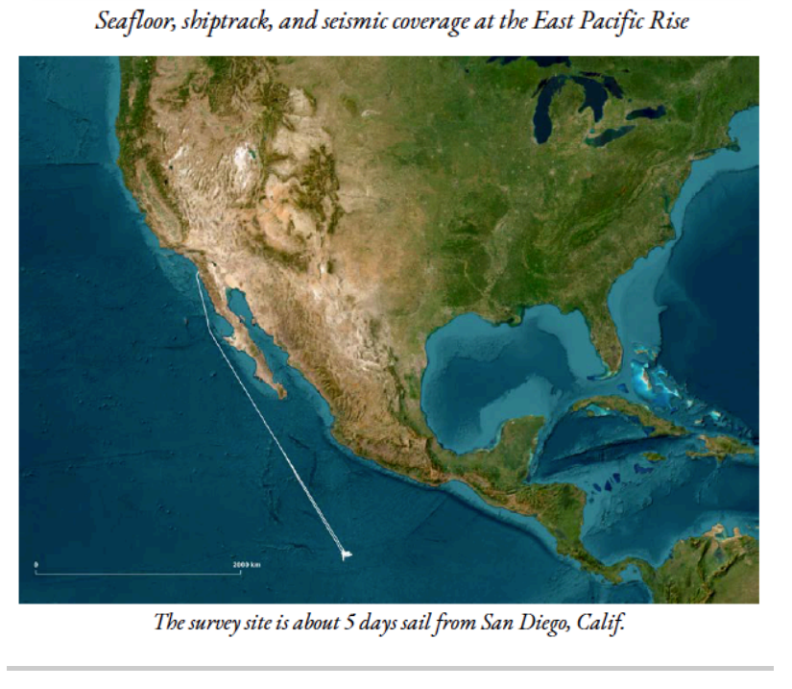


Seismic image of axial magma lens from one of the lines . Preliminary 3D datasets for MGL2602 and MGL0812, processed onboard R/V Marcus G. Langseth using the same workflows.



The near-field seismic fold target of 10 was exceeded throughout the survey area

View from the streamerdeck of R/V Marcus G. Langseth towing four 6 km long streamers, two paravanes, and four source arrays for 22 days at the East Pacific Rise in March 2026. Image: Cody Bablau



Seafloor, shiptrack, and seismic coverage at the East Pacific Rise

The survey site is about 5 days sail from San Diego, Calif.

R/V *F.G. Walton Smith*: A Highly Capable Vessel for Dive Operations

Contributed by Don Cucchiara

The University of Miami's R/V *F.G. Walton Smith* serves as a highly capable platform for coastal and shallow-water oceanographic research, supporting scientific teams with onboard laboratories, advanced instrumentation, and dedicated dive operations. This 96-foot catamaran is specifically designed to access environments such as reefs, mangroves, and seagrass beds, making it especially valuable for scientific diving missions that require direct human observation and sampling.

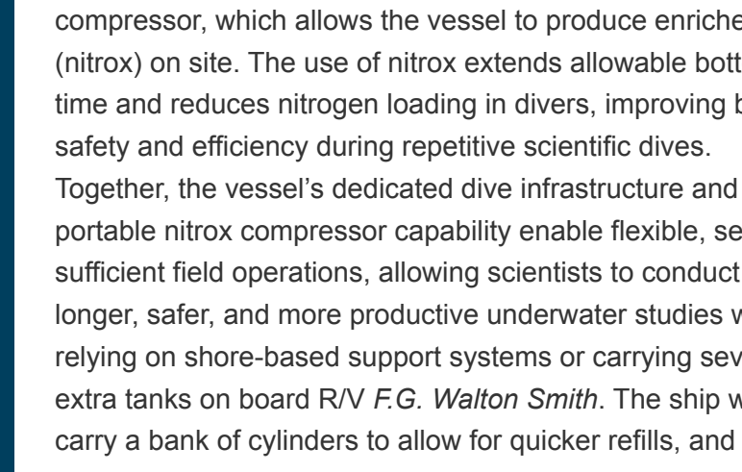
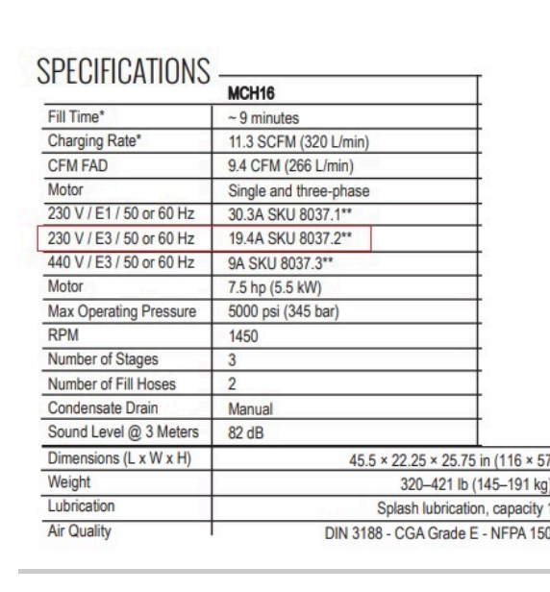


Photo Credit: Don Cucchiara

To support these missions, the vessel is equipped with a portable nitrox Nuvair MCH-16 Mini Tech SS Model dive compressor, which allows the vessel to produce enriched air (nitrox) on site. The use of nitrox extends allowable bottom time and reduces nitrogen loading in divers, improving both safety and efficiency during repetitive scientific dives. Together, the vessel's dedicated dive infrastructure and portable nitrox compressor capability enable flexible, self-sufficient field operations, allowing scientists to conduct longer, safer, and more productive underwater studies without relying on shore-based support systems or carrying several extra tanks on board R/V *F.G. Walton Smith*. The ship will carry a bank of cylinders to allow for quicker refills, and all air compressor/nitrox operations are conducted by the Marine Technician aboard.

R/V *F.G. Walton Smith* is unique in that it is the only UNOLS Academic Research Fleet vessel in the southeast region that has nitrox dive compressor capability.



SPECIFICATIONS	MCH16
Fill Time*	~ 9 minutes
Charging Rate*	11.3 SCFM (320 L/min)
CFM FAD	9.4 CFM (266 L/min)
Motor	Single and three-phase
230 V / E1 / 50 or 60 Hz	30.3A SKU 8037.1**
230 V / E3 / 50 or 60 Hz	19.4A SKU 8037.2**
440 V / E3 / 50 or 60 Hz	9A SKU 8037.3**
Motor	7.5 hp (5.5 kW)
Max Operating Pressure	5000 psi (345 bar)
RPM	1450
Number of Stages	3
Number of Fill Hoses	2
Condensate Drain	Manual
Sound Level @ 3 Meters	82 dB
Dimensions (L x W x H)	45.5 × 22.25 × 25.75 in (116 × 57 × 65 cm)
Weight	320–421 lb (145–191 kg)
Lubrication	Splash lubrication, capacity 1.8 L
Air Quality	DIN 3188 - CGA Grade E - NFPA 1500 - EN12021

R/V *Thomas G. Thompson's* 2025 deep-sea expedition to the Sulu Sea, Celebes Sea, and southern Philippine Sea

The R/V *Thomas G. Thompson* embarked with a distinguished team of researchers from the University of the Philippines Marine Science Institute (UP-MSI), the University of California, Santa Cruz, and Mindanao State University—Naawan. Their mission was to explore specific areas in the Sulu Sea, Celebes Sea, and southern Philippine Sea. Utilizing the ship's advanced multibeam echosounder system, the team successfully developed highly detailed topographic maps of the ocean floor. They also discovered significant underwater features, such as deep-sea volcanoes, obscure fault lines, and the initiation of internal waves.

Further details can be found in the Manila Bulletin: here.

Featured Photo

On March 6, #URIGSO hosted a ceremony transferring the Order of the Ancient Albatross, recognizing the oldest operating ship in the Academic Research Fleet.

The honor passed from the R/V *Endeavor*—which received the Order in 2022 following the retirement of the R/V *Oceanus*—to the R/V *Robert Gordon Sproul* of Scripps Institution of Oceanography.

Photographed:
Ash Hayden, URI's Marine Superintendent.

Dr. Steven D'Hondt, Dean of the URI Graduate School of Oceanography & Professor of Oceanography.

Rose Dufour, NSF Program Director.

Erich Gruebel, Manager NBC/Marine Scientific Services.

Upcoming Events

Safety Committee Meeting
Committee Meeting
05 May 2026
Woods Hole, MA

RVOC Meeting
06 & 07 May 2026
Woods Hole, MA

Spring DeSSC Meeting
20 & 21 May 2026
Woods Hole, MA

OBSIC-OS Meeting
10 & 11 June 2026
Austin, TX

Summer AICC Meeting
25 June 2026
Virtual

RVTEC Meeting
16 - 20 Nov 2025
Miami, FL

Winter AICC Meeting
13 & 14 Jan 2027
Seattle, WA

Did you know...

New Snapshot Functionality Now Available in SME and Research Planner

We're excited to introduce enhanced snapshot capabilities across both the SME and the Research Planner.

Scientists can now fully customize the map views included in an SME. This includes the ability to modify aspects, datasets, scale, layers, and other visualization parameters prior to submission. Multiple maps can also be added to a single SME, enabling richer spatial context and more precise communication of research insights.

A brief video tutorial is available here.

PDF versions of the Newsletter can be found here. To unsubscribe from UNOLS News, please reply to this email with the word "unsubscribe" in the body. Thank you!