



MERCI

MEDITERRANEAN SEA RESEARCH CENTER OF ISRAEL

SUMMER- FALL 2026

Research • People • At Sea • Looking Ahead

01

Statement from MERCI Director



Prof. Ilana Berman-Frank

DIRECTOR'S MESSAGE

Shalom.

I am happy to present our first Newsletter of the Mediterranean Sea Research Center of Israel (MERCi) outlining some of our activities throughout the past year.

MERCi was founded in 2012 and is a consortium of the predominant Israeli entities carrying out Mediterranean Sea research and education in marine sciences from their different perspectives. The consortium, which was established in 2012 by Prof. Zvy Ben-Avraham (U. of Haifa) presently comprises all 9 Israeli academic research universities and institutes, 1 college, and 2 governmental research institutions (The University of Haifa, Technion-Israel Institute of Technology, The Hebrew University of Jerusalem, Ben Gurion University, Bar-Ilan University, Tel Aviv University, Weizmann Institute of Science, Reichman University, Ariel University, Ruppin Academic Center, Israel Oceanographic and Limnological Research (IOLR), and the Geological Survey of Israel). This partnership was established following the national recognition that large gaps exist in our scientific understanding of the eastern Mediterranean Sea and Israel's Exclusive Economic Zone (EEZ), and that we lack the infrastructure and resources to address these gaps.

Since its establishment, MERCi has helped expand the opportunities available to the scientific community working on Mediterranean Sea research. The early years focused on the investment and procurement of new cutting-edge infrastructure and marine platforms. Other advances included: raising awareness and stimulating Mediterranean Sea research and especially large collaborative projects; augmenting national marine research programs – including national monitoring, mooring systems, and discoveries of deep-sea environments; helping to produce data and knowledge to support the inclusion of science-based decisions into policies, development, and conservation; and training opportunities for the next generation of marine scientists.

The overarching aim of the MERCi initiative is to provide a national-level interdisciplinary scientific framework and common resource basis to address the challenges facing Israel in the sustainable development and management of the Mediterranean marine environment. Moreover, the consortium aims to form larger partnerships and networks locally and internationally so that we can promote the scientific leadership of Israel in Mediterranean Sea research.



DIRECTOR'S MESSAGE

We have continued throughout these three years despite the many challenges to continued scientific endeavors created by the three-years of war and geopolitical instability. Accordingly, following the submission of a 5-year strategic plan, MERCI procured funds from the Public Budgeting Committee (Council for Higher Education) to support sea-going operations and marine infrastructures for 5 years (2024-2028).

We are happy to share some highlights of our activities and research we have supported during this period that includes:

- Support of ship-time and use of marine infrastructures (3.6 Million NIS) via competitive proposals.
- Funding for professional training for infrastructure and marine operations
- Workshops for graduate students and post-docs: Marine spatial planning (2025), Marine Mammal, Robotic
- Workshops for undergraduates: introduction to the Mediterranean (2025, 2026)
- Fellowships for students (research, travel grants)
- Collaboration with other organizations working for the promotion of the marine environment.

We have much work ahead in consolidating and ensuring MERCI's future. I would like to see MERCI develop into a national partnership that makes a real difference to the marine science community and to the marine environment in both Israel and our region. I believe that by working together as a national partnership we can synergize our strengths as a community to provide a data-based foundation for decision makers and stakeholders utilizing or requiring information on the eastern Mediterranean Sea. I especially believe that, as the challenges that the Mediterranean Sea faces have NO BORDERS, MERCI should take a more active role in addressing some of the large issues, with the Israeli marine science community leading regional and international programs.

I would also like to take this opportunity as we are nearing a new Jewish and academic year to wish everyone a safer, more peaceful, routine and productive year. May we continue to use our science to build bridges for a better world.

Sincerely,
Ilana



02

OUR MISSION

MAJOR OBJECTIVES 2024–2028 AND BEYOND

MERCI provides a national collaborative platform that combines marine-science infrastructure, resources and expertise to address the sustainable development and management of Israel’s Mediterranean marine environment.

1

ADVANCE COLLABORATIVE RESEARCH

Enable multidisciplinary Mediterranean Sea research and address major scientific gaps.

2

OPTIMIZE ACCESS & INFRASTRUCTURE

Facilitate efficient use of shiptime, marine equipment and shared research platforms.

3

BUILD THE NEXT GENERATION

Support fellowships, training, conferences and professional development for students and staff.

4

CONNECT SCIENCE & PARTNERS

Strengthen national and international collaborations across institutions and disciplines.

5

SUPPORT EVIDENCE-BASED DECISIONS

Provide data, analyses and scientific foundations for stakeholders, policy and sustainable management.

6

DISSEMINATE & ENGAGE

Promote MERCI activities, knowledge and reports to researchers, decision makers and the public.



03



ACTIVITIES 2025 - 2026

MERCi ACTIVITIES 2025–2026

NIS 3.68 MILLION

allocated through calls supporting
shiptime and marine equipment

RESEARCH AT SEA

13 new marine research projects were funded through
calls for shiptime and marine equipment during 2025-26.

RESEARCH FELLOWSHIPS

Financial support for dozens of graduate students
researching the Mediterranean Sea across Israel.

TRAVEL, TRAINING & CONFERENCES

Support for dozens of students participating in training,
conferences and workshops in Israel and abroad.

PROFESSIONAL TRAINING

Support for professional training of engineers and laboratory
staff from MERCi member institutions.

COURSES & WORKSHOPS

Co-funding workshops and courses, including Marine Planning
and the Mediterranean Sea Ecosystem course.

MARINE SCIENCE COMMUNITY

Support for conferences and scientific activities,
including The Israeli Association for Aquatic Sciences and Society
for the Protection of Nature in Israel events.

04



ACADEMIC COMMITTEE

TEACHING AND SUPPORT FOR YOUNG SCIENTISTS

A FEW WORDS FROM THE CHAIR OF THE ACADEMIC COMMITTEE – Dr. Shiri Zemah-Shamir

Addressing the complex challenges of the Mediterranean marine environment requires a broad and interdisciplinary perspective. Alongside marine science, ecology and biology, disciplines such as economics, policy, engineering, data science, and the social sciences have an important role in supporting sound management and informed decision-making.

Reflecting this interdisciplinary approach, one of MERCI's central commitments is to support the next generation of researchers and professionals working on marine and coastal issues. During 2025–2026, we continued to create opportunities for students and early-career researchers from across Israel through research fellowships, courses, workshops, conferences, training activities, and support for scientific travel and exchange.

Our aim is not only to support individual researchers, but also to strengthen connections across disciplines and institutions. Looking ahead, we will continue to promote interdisciplinary learning and collaboration and to provide young researchers with the knowledge, experience and professional networks needed to contribute meaningfully to Mediterranean marine research and management.

Investing in the next generation is essential to strengthening the scientific and professional capacity required to understand, protect, and sustainably manage the Mediterranean marine environment.

FELLOWSHIPS

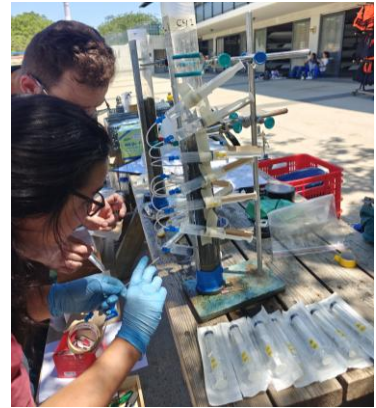
TRAINING & COURSES

SCIENTIFIC COMMUNITY

PRESENTING

Debra Ramon • Lorena Benkel • Pavel Smirnov • Rotem Zirler

STUDENT RESEARCH FELLOW



Debra Ramon, *BEN-GURION UNIVERSITY*

Estuarine Regulation of Mercury Cycling and Microbial Methylation in Mediterranean Coastal Sediments

Debra Ramon¹, Barak Herut², Efrat Eliani-Russak¹, Maxim Rubin Blum^{2,3}, Orit Sivan¹

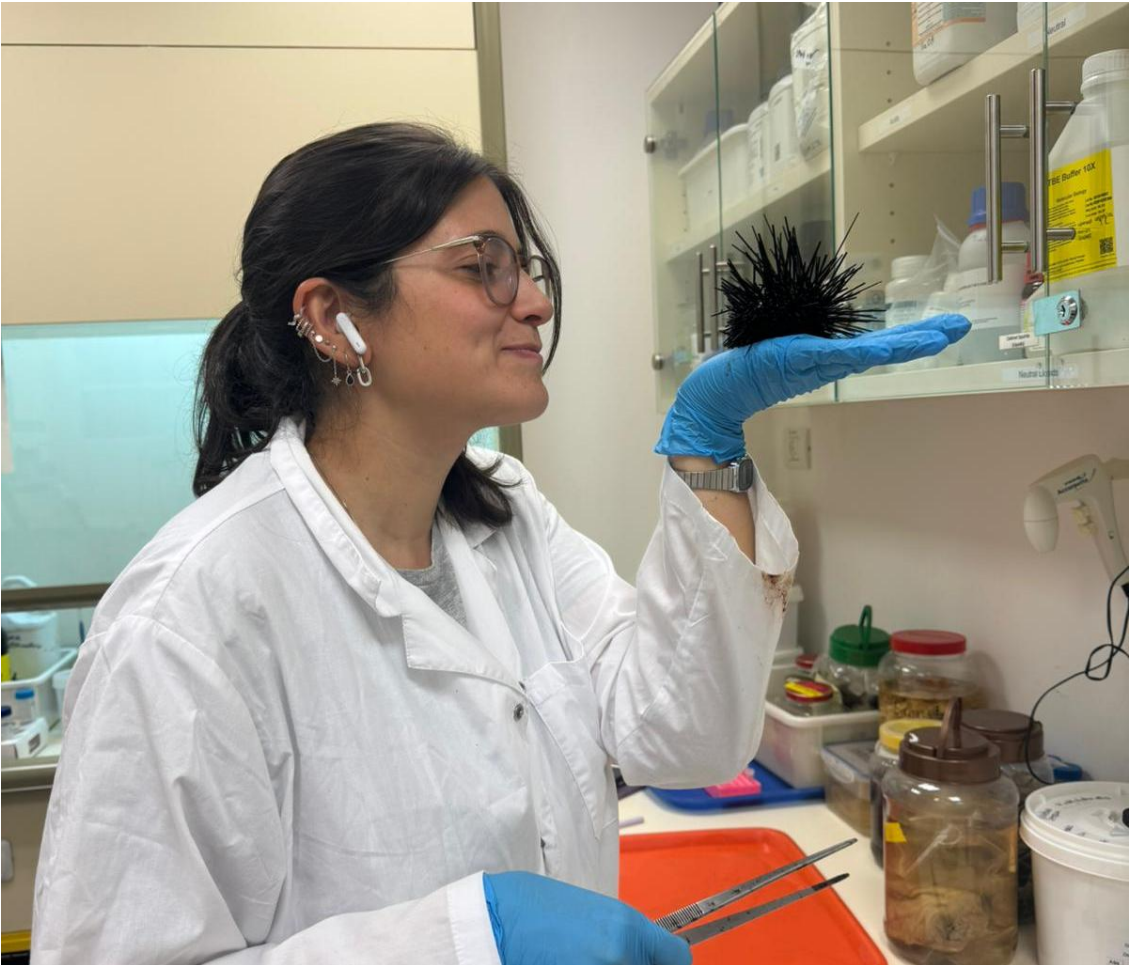
¹Department of Earth and Environmental Sciences, Ben-Gurion University of the Negev, Be'er Sheva, Israel

²National Institute of Oceanography, Israel Oceanographic and Limnological Research, Haifa, Israel

³Department of Marine Biology, Leon H. Charney School of Marine Sciences, University of Haifa, Haifa, Israel

Methylmercury is a toxic form of mercury that bioaccumulates in aquatic food webs, posing risks to ecosystem and human health. Particularly, estuarine sediments are recognized as hotspots for microbial mercury methylation, yet the environmental conditions controlling these processes have been poorly researched. This project investigates the geochemical and microbial drivers of mercury cycling and methylation along a freshwater to marine gradient of the Yarkon Estuary and Mediterranean Sea. To date, two field campaigns have been conducted along the Yarkon Estuary characterizing contrasting seasons and hydrological conditions. Sediment cores were collected across the salinity gradient and characterized for porewater geochemistry, including sulfur, iron, methane, dissolved inorganic carbon, dissolved organic carbon, nutrients, and total mercury. Future work will include microbial community characterization as well as mercury methylation genes in sediment layers of interest.

STUDENT RESEARCH FELLOW



Lorena Benkel, TEL AVIV UNIVERSITY

The reproductive cycle of the invasive echinoid *Diadema setosum* in the Mediterranean Sea.

In recent times, the rapid expansion of the long-spined sea urchin *Diadema setosum* across the Levantine Basin has emerged as one of the most significant shifts in Mediterranean benthic ecology. As a keystone ecosystem engineer, the species proliferation in the region raised critical concerns regarding the stability and composition of native community structures. First documented in the Mediterranean Sea in 2006, and following a recent decade-long period of exponential growth, the species established high population densities by 2025. Because the capacity of an invasive species to proliferate and impact a new environment is fundamentally tied to its reproductive success, characterizing the reproductive capacity of the invasive population is imperative. To this purpose, my research aims to describe the annual reproductive cycle of *D. setosum* in order to evaluate its long-term invasive potential. To provide the data required for this assessment, I perform gonadosomatic index calculations (calculated as the ratio of gonad mass to total body mass) and histological analyses of the gonads of specimens collected during continuous monthly field sampling over the course of a year. Ultimately, this work will provide the baseline data necessary for local authorities to implement science-based strategies to manage the invasion.

STUDENT RESEARCH FELLOW



Pavel Smirnov , *UNIVERSITY OF HAIFA*

Cold Seepage Carbonates in a Warming Mediterranean: New Insights from Isotope Patterns of Coexisting Pyrite

We investigate recent and pioneering discoveries of methane-derived authigenic carbonates from the seafloor of the Southeastern Mediterranean, focusing on cold-seep sites in the Levant Basin and Israel Slump Complex. Our research aims to reveal the history, timing, and controls of methane emissions during the Quaternary and to better understand how these dynamic seafloor systems evolved through time. The results can contribute to regional paleoenvironmental reconstructions and provide new constraints for understanding the role of marine methane in a changing climate.

To gain further insight into methane-seep processes, we focus on pyrite, a mineral closely associated with microbial methane oxidation and sulfate reduction. By studying its sulfur isotope composition, we aim to trace microbial activity, evaluate the intensity of sulfate reduction, and reconstruct interactions between methane and sulfate beneath the seafloor. Together, these mineralogical and isotopic records provide a window into the history of methane release and its biogeochemical impact in the Southeastern Mediterranean.

STUDENT RESEARCH FELLOW



Rotem Zirler, *TEL AVIV UNIVERSITY*

Using eDNA as an alternative for traditional Autonomous Reef Monitoring Structures (ARMS) processing

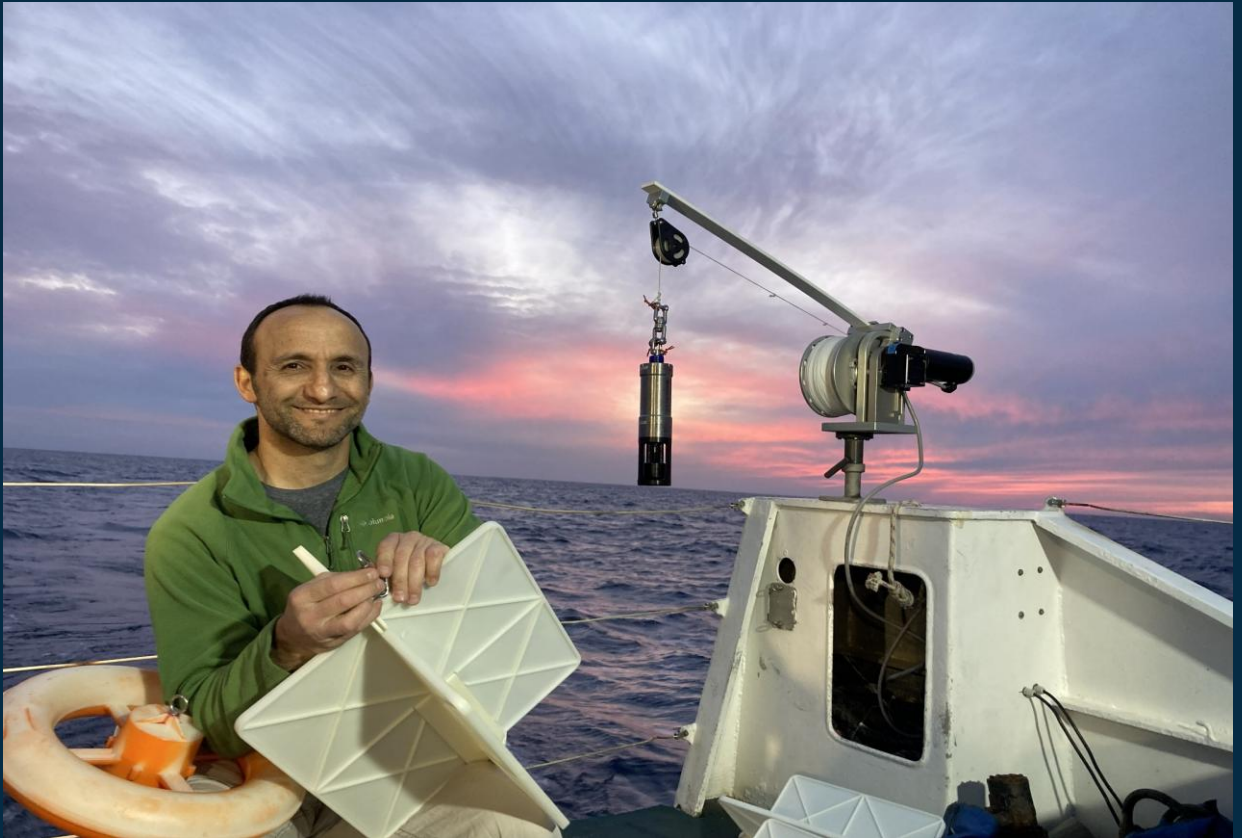
The Mediterranean Sea hosts a unique and highly diverse ecosystem, supporting a remarkable variety of marine life. While biodiversity is essential for maintaining healthy and resilient ecosystems, monitoring it remains a major challenge. Many marine organisms are tiny, hidden within complex habitats, or difficult to identify, meaning that traditional surveys often provide only a partial picture of marine biodiversity.

My PhD research uses Autonomous Reef Monitoring Structures (ARMS), a standardized tool that provides a highly reliable way to survey marine biodiversity. However, the processing of ARMS units is time- and labor-intensive, and requires the involvement of many taxonomic experts in order to generate meaningful results, making large-scale monitoring costly and limiting its use to museums and broad research collaborations.

My research aims to overcome this bottleneck by integrating environmental DNA (eDNA) with the ARMS framework. Instead of relying solely on the organisms collected from each ARMS unit, I analyze the DNA they leave behind in the surrounding water and compare these genetic signatures with the physical communities inside the ARMS. This approach could potentially make effective ARMS-based monitoring accessible to a wider range of organizations, contributing to strengthening conservation and management of the Mediterranean Sea.

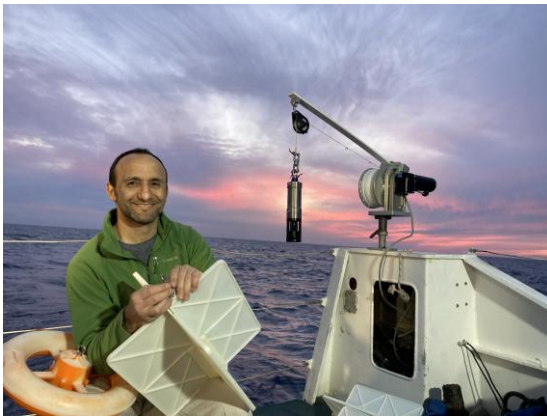
05

MERCI Support of Shiptime & Operations at Sea



Aviv Solodoch, *THE HEBREW UNIVERSITY OF JERUSALEM*

Eastern Levantine Submesoscale Currents and Effects on Pollutants Spreading



Marine vortices are swirling flow structures at sea, resulting in significant modulation to ocean currents, and which can trap and transport materials for long durations. While deep-sea vortices have been investigated for decades, formation and properties of vortices on the continental shelf is still not well observed or understood. Therefore we conducted oceanographic campaigns involving multiple research platforms, to cover and investigate in detail continental shelf vortices. We deployed a research vessel (Ecco Ocean's Mediterranean Explorer), a marine glider (from IOLR), 25 tracked drifters, drifting instrumented buoys, and unmanned aerial vehicles. We discovered that indeed vortices can form on the continental shelf, and can result in trapping and transport of biological material to the deep sea for several weeks and over a travel distance of over 50 km, as well as cause significant vertical mixing and turbulence in the upper ocean.

This work was led by the PIs Hezi Gildor, Yaron Toledo, Aviv Solodoch, Roy Barkan, and Yoav Lehahn.

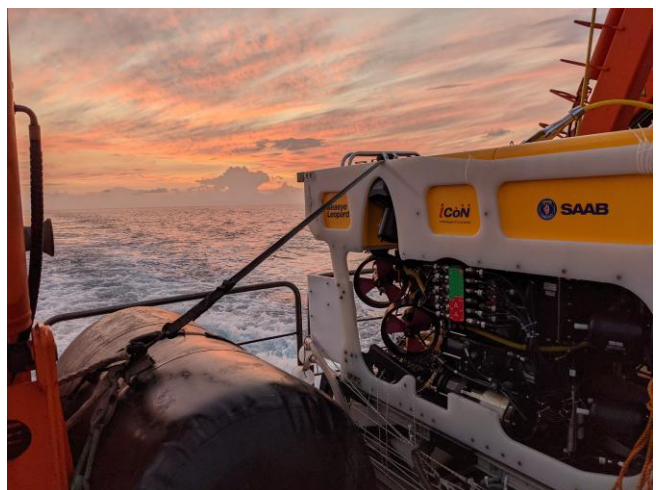
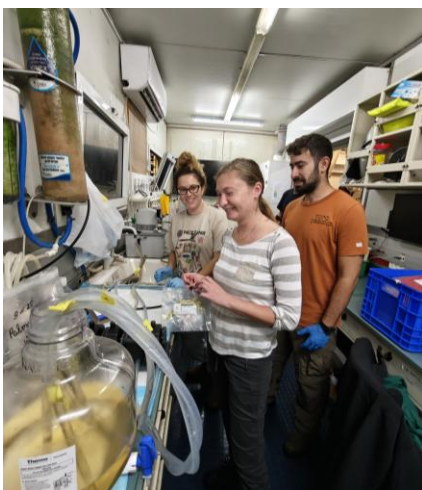
The research vessel and glider use were partially supported by funding from MERCI.

Maxim Rubin-Blum, *IOLR*

Returning to one of the most remarkable discoveries in the eastern Mediterranean Sea

Far beneath the surface of the southeastern Mediterranean, at a depth of 1,150 meters, methane-rich brines emerge from the seafloor, sustaining a remarkable oasis of life in the otherwise nutrient-poor deep sea. Following the discovery of the Palmahim Disturbance brine pool ecosystem, our multidisciplinary team returned in 2025 to uncover how life organizes across this unique ecosystem, from the seafloor to the overlying water column.

Using the ROV Yona aboard the R/V Bat Galim, we collected microbial biofilms from carbonate rocks, plastics, shark egg cases, and long-term Artificial Reef Monitoring Systems (ARMS), together with seep sediments, seawater, plankton, and chemosynthetic animals. At the same time, autonomous glider missions and dedicated water-column sampling characterized the oceanographic conditions above the seep, providing a rare ecosystem-scale perspective that connected deep-sea microbial processes with the surrounding Mediterranean waters. The expedition has generated an exceptional multidisciplinary dataset combining environmental DNA, amplicon sequencing, metagenomics, metatranscriptomics, microscopy, geochemistry, and ecological surveys. These data are revealing how microbial communities colonize natural and artificial substrates, drive methane and nutrient cycling, and support deep-sea biodiversity. They underpin multiple ongoing studies and international collaborations, including the Horizon Europe REDRESS project, advancing both fundamental understanding and the conservation of vulnerable deep-sea ecosystems.

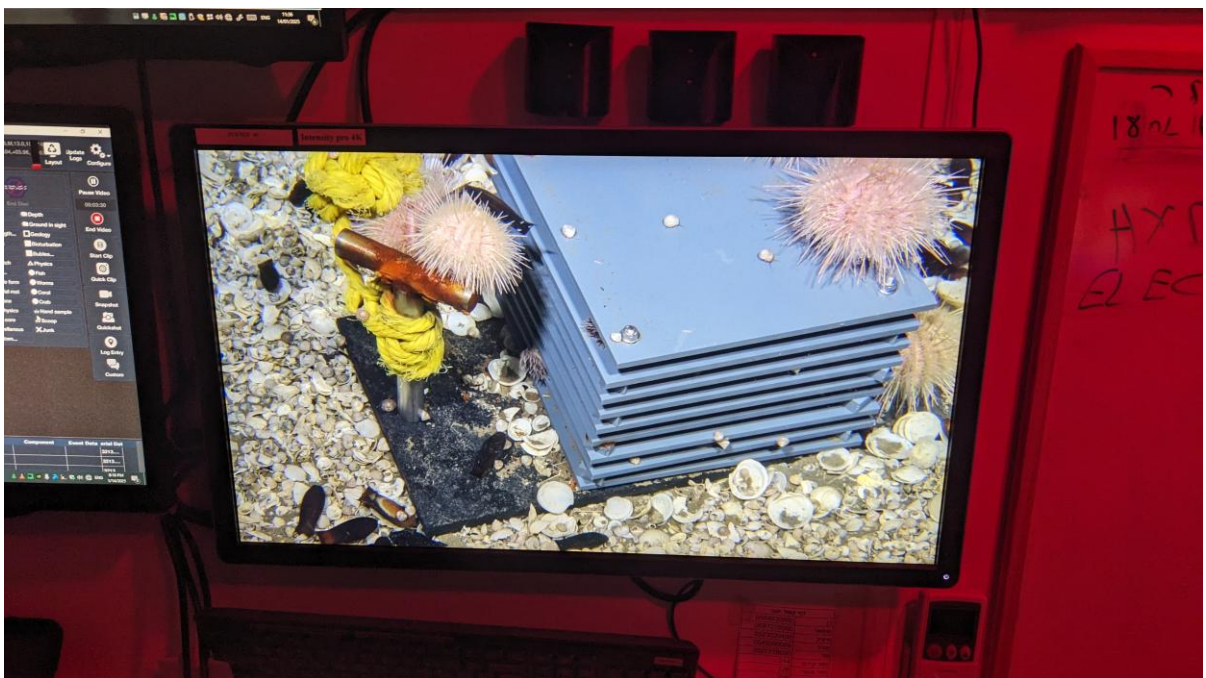


SEA DAYS

Maxim Rubin-Blum, *IOLR*

Returning to one of the most remarkable discoveries in the eastern Mediterranean Sea - **How MERCI made it possible**

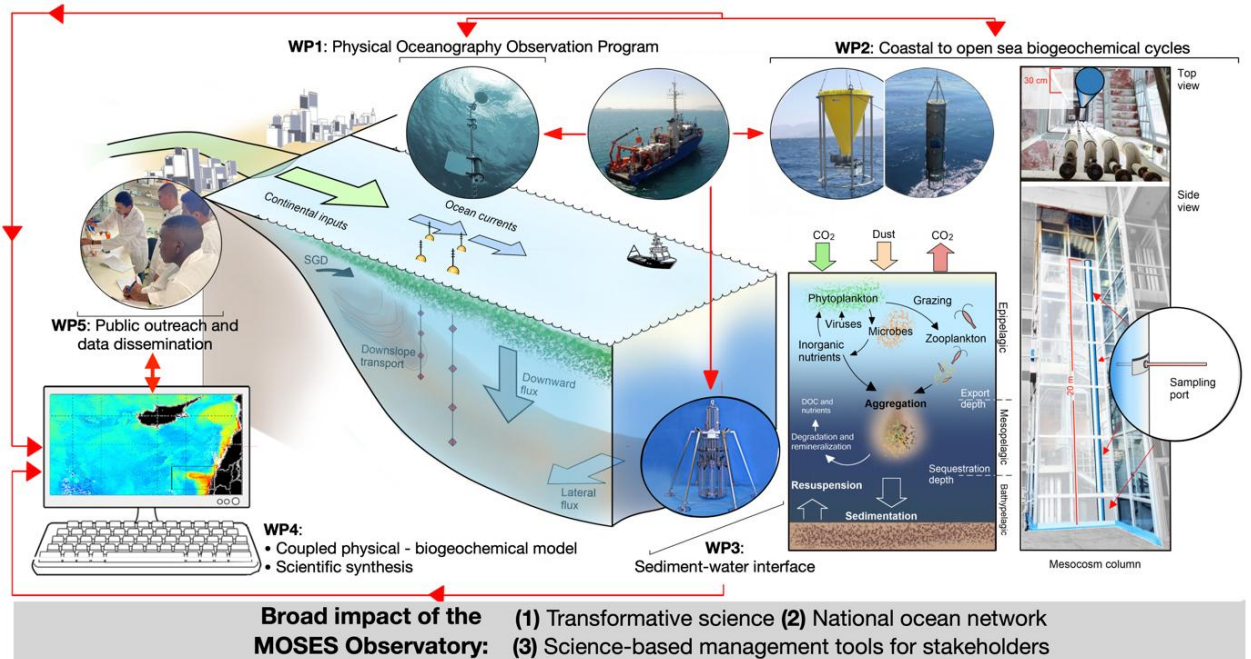
MERCI funding enabled this multidisciplinary field campaign by supporting research expeditions aboard the R/V Bat Galim, operation of the ROV Yona, dedicated water-column sampling, and autonomous glider deployments. These complementary research platforms provided an integrated view of the Palmahim Disturbance methane seep ecosystem, from the seafloor to the overlying water column, and generated unique biological, geological, and oceanographic datasets. The expedition continues to support multiple research projects, international collaborations, and long-term monitoring efforts, while strengthening the scientific foundation for the conservation and restoration of Mediterranean deep-sea ecosystems.



[YOUTUBE VIDEO](#)

Adi Torfstein, *THE HEBREW UNIVERSITY OF JERUSALEM*

The MOSES Observatory



The MOSES Observatory (Margins-Open Sea conveyor and the biological pump in the ultra-oligotrophic Eastern Mediterranean Sea under climate change) is a multi-institutional Israeli marine research initiative, whose lead PI is Prof. Adi Torfstein of the Hebrew University of Jerusalem, and brings together researchers from HUJI, Ben-Gurion University, IOLR, the Geological Survey of Israel (GSI), Tel Aviv University, Bar-Ilan University, and the Weizmann Institute of Science. Prof. Hezi Gildor (HUJI) is head of the physical oceanography group, Prof. Orit Sivan (BGU) is head of the sediment-water interface group, Prof. Yishai Weinstein (BIU) is head of the biogeochemical cycles group, and Prof. Sigal Abramovich (BGU) is head of the outreach & education group.

Funded by Israel's Council for Higher Education (VATAT/PBC), MOSES was created to build sustained, ship-based observational infrastructure across the Israeli continental shelf and the Eastern Mediterranean, addressing longstanding gaps in understanding of this poorly studied, ultra-oligotrophic basin. Its aims span physical circulation and eddy dynamics, marine biogeochemical cycling and carbon export, trace element and isotope geochemistry, sediment transport through submarine canyons and channels, coastal groundwater-seawater interactions, and microbial and phytoplankton ecology — integrating time-series moorings, dedicated research cruises, and geochemical and sedimentary archives to build a long-term, systems-level picture of the Eastern Mediterranean.

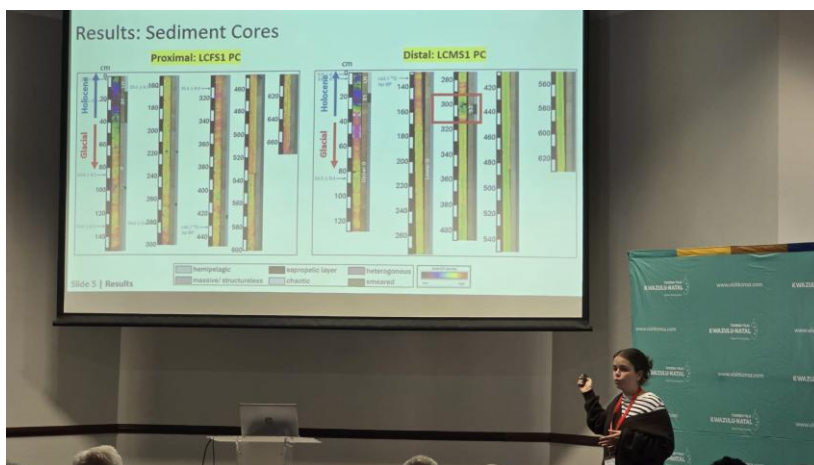
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Adi Torfstein, *THE HEBREW UNIVERSITY OF JERUSALEM*

The MOSES Observatory

Cruises to sample the trace element, and Pb and Th isotopic compositions of eastern Mediterranean seawater, led by HUJI students (Tal Benaltabet and Gil Lapid), have shown for the first time trace element distribution patterns, characterized provenance end members, and used the thorium isotopes to show for the first time the residence times and lithogenic fluxes in the Mediterranean (see figures below). References: Benaltabet et al. (2025), and Lapid et al. unpublished results.

PhD student Lea Sivan (HUJI) had been studying Sediment Provenance and Late Quaternary Activity of the Levant Submarine Channel, Eastern Mediterranean Sea (supervised by Prof. Adi Torfstein, HUJI, and Dr. Oded Katz, GSI). Based on analyses of a series of downcore records along the Levant Channell, the largest submarine feature in the eastern Mediterranean, Lea has shown that the Levant channel was extremely active in terms of sediment transport during the last glacial, but has been dormant through most of the Holocene, with accumulation of anthropogenic metal components during the past ~150 years.



Lea Sivan, a HUJI PhD student, presenting the results of her study of the Levant Channel in the eastern Mediterranean Sea, at the prestigious International Conference on Seafloor Landforms, South Africa (2026), and an example of one of the cores she sampled in the lab

[WEB LINK](#)

Roe Diamant, *UNIVERSITY OF HAIFA*

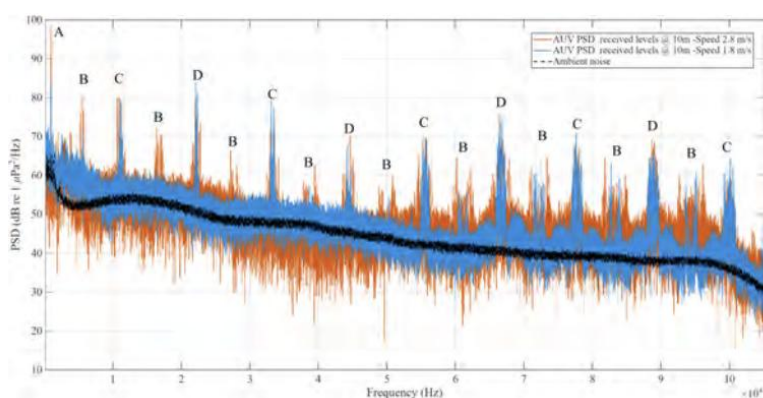
SHIELD-AUV: Usage of the MERCI AUV Snapir for Project Shield for Protection of Critical Marine Infrastructure



As submerged electric vehicles become more common, understanding their acoustic signatures is increasingly important for detection and tracking. A research team from the University of Haifa and Tel Aviv University developed and tested a new method for characterizing the underwater noise produced by these vehicles. During field trials in coastal waters near Haifa in January 2026, the team used calibrated hydrophones to record an A18D autonomous underwater vehicle (AUV), while synchronizing the acoustic data with information on its speed, depth, position, and operating conditions. The analysis identified distinct acoustic features linked to the vehicle's electric motor, propulsion system, and control electronics, and examined how these sounds changed with speed and observation angle. The findings contribute to more reliable underwater-noise characterization methods, supporting improved passive detection, classification, and tracking of submerged electric vehicles in complex coastal environments. A research paper was submitted as an outcome of the work:

Mark Shipton, Amir Boag, Roe Diamant, "A Methodology for Characterizing Underwater Radiated Noise from Submerged Electric Vehicles in a Coastal Environment: An AUV Test Case", submitted to Elsevier Ocean Engineering

MERCi—the Mediterranean Sea Research Center of Israel at the University of Haifa—enabled the maritime field activities by assisting with the chartering of a support vessel and crew and covering the expenses associated with operating the AUV.



06

Expected Activities 2026–2027

Save the dates — upcoming MERCi events, calls, courses, workshops and research opportunities.

EXPLORING THE MEDITERRANEAN MARINE ECOSYSTEM

INTER-INSTITUTIONAL COURSE | MERCi × RUPPIN ACADEMIC CENTER



The course, led by Dr. Ayelet Dadon-Pilosof of Ruppin Academic Center, was designed to introduce students to the complex ecosystem of the Mediterranean Sea, combining theoretical knowledge with hands-on field experience.

NEXT COURSE • MAY 2027

6 MAY 2027 | PRE-COURSE DAY • 09:00–16:00

16–21 MAY 2027 | INTENSIVE COURSE WEEK • NO OVERNIGHT STAY

Michmoret Campus • Ruppin Academic Center

The course combines theoretical knowledge with laboratory and field-based experience in the Mediterranean Sea ecosystem.

LECTURES

LABORATORIES

COASTAL FIELD TRIPS

RESEARCH SAMPLING

RESEARCH CRUISE

SNORKELING



WATCH THE COURSE VIDEO

SAVE THE DATES 2026

DATE

3
NOV

BLUE TECH SUMMIT IL.26

International summit exploring blue economy innovation, AI, marine robotics, blue biotech, energy and next-generation maritime infrastructure in Haifa.

[LEARN MORE](#) →

DATE

8–9
DEC

WORKSHOP ON MARINE ROBOTICS & SENSORS

A 2-day hands-on workshop on low-cost marine robotics, sensors, Arduino programming and system integration. Hebrew University.

[LEARN MORE](#) →

WORKSHOP REGISTRATION DEADLINE 20 NOVEMBER 2026

DATE

15–16
DEC

IAAS & IOLR JOINT MEETING 2026

The Israeli Association for Aquatic Sciences annual meeting, in partnership with IOLR, at the Kinneret Limnological Institute. Abstract deadline: 15 Oct 2026.

[LEARN MORE](#) →

DATE

13–17
DEC

SHARKS WORKSHOP

Multidisciplinary workshop on sharks as top predators of the Mediterranean Sea.

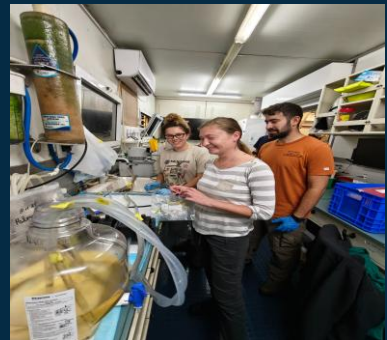
[LEARN MORE](#) →

WORKSHOP REGISTRATION DEADLINE 10 OCTOBER 2026

APPLICATIONS → RESULTS 17 OCTOBER 2026

07

Advertising of tenders



MERCi'S CALL FOR PROPOSALS

Support for research, training and collaboration
in Mediterranean marine sciences

TRAVEL / TRAINING / CONFERENCES

Support for participation in scientific conferences,
professional training, and workshops in Israel and abroad.

APPLICATION DEADLINE • NOVEMBER 30, 2026
RESULTS EXPECTED • JANUARY 2027

SECOND ROUND • Applications by April 1, 2027 • Results expected in May 2027

RESEARCH FELLOWSHIPS

Support for graduate students and early-career researchers
to advance Mediterranean Sea research.

APPLICATION DEADLINE • JANUARY 3, 2027
RESULTS EXPECTED • FEBRUARY 2027

WORKSHOPS / COURSES / EVENTS

Support for the organization of scientific workshops,
courses and events.

APPLICATION DEADLINE • NOVEMBER 30, 2026
RESULTS EXPECTED • MID-JANUARY 2027

PROFESSIONAL TRAINING & DEVELOPMENT

Support for technical staff participating in professional training and courses
in Marine Sciences, engineering and technologies, in Israel and abroad.

APPLICATION DEADLINE • NOVEMBER 2026 | RESULTS • JANUARY 2027

SHIPTIME / MARINE INFRASTRUCTURE

Expected call for proposals for shiptime and use of marine infrastructure.

APPLICATION DEADLINE • JANUARY 2027

[LEARN MORE & APPLY](#)

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Explore our work • Follow our updates • Share the newsletter

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FOLLOW

Social media



CAREER OPPORTUNITIES

Looking for your next opportunity in marine science?

Explore current job openings, research positions and other opportunities in the marine sciences.

Please encourage colleagues and partners to subscribe,
and share this newsletter with your networks.