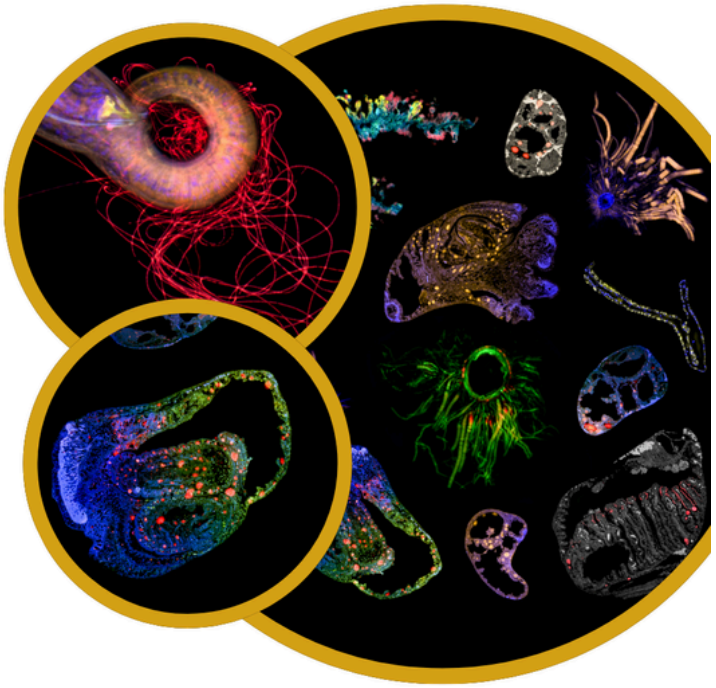
ISA-Ifremer Meioscool Workshop 2026

A unique opportunity to advance your knowledge and skills in marine meiofauna taxonomy and research

Terms of Reference



Workshop dates:
13 - 17 April, 2026

Location:
Plouzané, France

Background

Meiofauna is a collective name for a diverse assemblage of eukaryotic organisms dominating the benthic environment, including small animals and protists operationally defined based on the standardized mesh size of sieves with 1000 µm and 32 µm as upper and lower limits, respectively. Meiofauna vitally contributes to ecosystem processes and functions and studies showed their potential as indicators and sentinels for ecosystem health. All meiofauna characteristics considered (small organisms requiring expert skills not available; too many species still undescribed considering the limited number of taxonomists; accessible and easy-to-use identification guides/tools for the non-taxonomists rare), the taxonomic impediment is especially severe for this important marine compartment. Even if technology is pushing a revolution in taxonomy, the major current problem related to applying fingerprinting techniques is the lack of meiofauna data in gene or images repositories making impossible to associate sequences to species and to their functional roles in the ecosystem. Another important aspect is the lack of active meiobenthologists.

From its side, Ifremer initiated the Meioscool initiative in 2013. Meioscool workshops and summer schools aim to bring together experts in meiofauna, increase awareness of their role in marine ecosystems, train students and researchers, and stimulate the emergence of a new generation of meiobenthologists. Since their first edition, Meioscool has been a wellspring of cooperation and formation of new research groups and projects revitalizing international collaborations.

Meioscool is also an incredible opportunity for students and young researchers from developing countries to get access to the most up to date techniques and to discuss with senior members of the international meiofauna community for finding possible jobs, contracts, and grants after the event.

As far as deep-sea environments are concerned, the International Seabed Authority (ISA), the international organization through which States Parties organize and control activities in the Area, is mandated under UNCLOS to carry out, coordinate and share the results of marine scientific research carried out in the Area. In this context, at the 2022 UN Ocean Conference, ISA launched the Sustainable Seabed Knowledge Initiative (SSKI) as a flagship initiative for implementing the ISA Action Plan for Marine Scientific Research (MSR Action Plan) adopted by the ISA Assembly in 2020. SSKI aims to advance scientific knowledge of deep-sea biodiversity, facilitate capacity-building efforts for deep-sea taxonomy research, and inform relevant decision-making processes. While spearheading initiatives on species cataloguing, data sharing, and developing tools for species identifications, SSKI focuses on facilitating taxonomic descriptions with a target of at least 1,000 new deep-sea species described by 2030.

The ISA-Ifremer Meioscool workshop will directly contribute to achieving SSKI outcomes in generating new knowledge on deep-sea meiofauna species and facilitating the development of new tools and skills in deep-sea meiofauna research.

Workshop objectives

The 2026 ISA-IFREMER Meioscool workshop program will explore the world of deep-sea meiofauna in the context of deep-sea mineral exploration and possible future exploitation.

Key program areas include:

- ISA Standardized Approaches: Training participants in standardized meiofauna study methods for regional baseline and monitoring studies.
- Meiofauna Taxonomy: Capacity building in meiofauna taxonomy, including the description of new species and the creation of a network of deep-sea meiofauna taxonomists from developing countries.
- Integrative Tools: Providing knowledge and training in advanced techniques such as imaging (2D/3D), fingerprinting techniques (DNA and proteomic fingerprinting), and artificial intelligence approaches in meiofauna imaging and DNA barcoding.
- Meiofaunal Functional Traits: Exploring the use of functional traits as early detection indicators of anthropogenic impacts in deep-sea environments.
- Training and Outreach Immersive Tools: Introducing a 3D virtual reality device to enhance the study and understanding of meiofauna structure.
- Outreach and Citizen Science: Engaging the public through outreach initiatives such as the Meioscool Curiosity Kit.

Expected outcomes

The ISA-IFREMER Meioscool project aims to:

- Enhance global capacity and knowledge-sharing on deep-sea meiofauna diversity by strengthening north-south and triangular cooperation.
- Foster national, regional, and global networks of trainees and trainers in meiofauna research by establishing and expanding these connections.
- Raise a new generation of meiobenthologists by training students and researchers through interdisciplinary approaches to meiofauna research.
- Actively promote female participation in STEM careers, by encouraging women's involvement and engagement in the field.

Building upon Ifremer's scientific and technological expertise and the success of previous Meioscool workshops and summer schools, the 2026 ISA-IFREMER Meioscool workshop is expected to bridge the gap in understanding and studying meiofauna by facilitating capacity building, knowledge-sharing, and international collaboration, in line with ISA programmatic documents. By organizing the training school, providing comprehensive resources, and promoting scientific advancements, ISA-IFREMER Meioscool workshop will raise a new generation of meiobenthologists and expand global networks of experts and trainers in this critical field of marine sciences.

Through its initiatives, ISA-IFREMER Meioscool will also contribute to advancing deep-seameiofauna research, including the description of new speciesand the development of innovative techniques for predicting impact and resilience in deep-sea ecosystems. Overall, ISA-IFREMER Meioscool will contribute to the implementation of international agreements for ocean governance and biodiversity conservation.

Most importantly, the activity will contribute to the implementation of the ISA Action Plan in support of the United Nations Decade of Ocean Science, the global deep-sea research agenda adopted by all ISA Member States in 2020, with peculiar reference to its strategic research priorities 2 and 6.1 [1].

The Meioscool is also aligned with the ISA Capacity Development Strategy adopted in 2022 by the ISA Assembly, in that it fosters strategic partnerships with competent organizations to ensure synergies in the delivery of capacity development activities and implements one of its key outputs, i.e. the organization of summer schools on deep-sea related matters in partnership with relevant institutions.[2]

1 ISBA/26/A/17
2 ISBA/27/A/11

Expected Outputs

- ISA-IFREMER Meioscool "Training Kit": A comprehensive package including a benthic imaging device, digital materials, and technological tools such as a web-based platform for image analysis. The kit will enable post-event interactions and sustained collaborations among participants. The kit will also allow students to become new trainers with organizational skills to convene training schools in their countries.
- Massive Open Online Course (MOOC): ISA-IFREMER Meioscool contents will be freely available online, offering a dedicated MOOC for interested individuals to access and learn at their own pace.
- Special Issues in Scientific Journals: Each ISA-IFREMER Meioscool event will result in dedicated special issues in scientific journals, fostering the dissemination of knowledge and research outcomes.

Eligibility criteria

The ISA-IFREMER Meioscool workshop 2026 will welcome participants with varying levels of experience (Postgraduate (PhD) students, postdoctoral, early-career and senior researchers) in meiofauna taxonomy, including species identification and description. As a minimum requirement, candidates should hold a Bachelor’s degree-level education (preferably in natural sciences) and should be enrolled in a first Master’s level course (or equivalent) in marine biology, biodiversity and ecology.

Other requirements for all participants, include:

- National of a developing State (required)
- Proficient in English language (required)
- Background in benthic fauna and/or taxonomy of meiofauna, including marine or freshwater taxa (recommended)
- Motivated and interested in investigating deep-sea meiofauna in the context of anthropogenic impact assessment.