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The Université Internationale de la Mer, Arts and Sciences

L'Université Internationale de la Mer, les arts et les sciences

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ABSTRACT. This article discusses the importance of combining both art and science approaches for raising awareness on ocean issues and developing a marine and maritime culture. This is illustrated by the experience of the Université Internationale de la Mer, based on the French Côte d'Azur. The article describes different ways by which arts and sciences help in ocean acculturation and exploration, as well as the need of combining artistic and scientific mindsets for ocean and coastline foresight exercises. Both acculturation and foresight efforts will be key for coping with long term ocean challenges highlighted at UNOC3.

RÉSUMÉ. Cet article souligne l'importance de combiner des approches à la fois scientifiques et artistiques pour développer la conscience des problématiques océaniques et développer une culture marine et maritime. L'expérience de l'Université Internationale de la Mer, basée sur la Côte d'Azur, en donne l'illustration. L'article esquisse différentes manières par lesquelles la combinaison des arts et les sciences contribue à l'acculturation à l'océan et à son étude. Il montre également le rôle d'une double démarche scientifique et artistique dans la prospective des mers et des littoraux. Acculturation et prospective sont essentielles pour relever les défis posés à long terme par les transformations de l'océan, comme le met en évidence UNOC3.

KEYWORDS. Ocean transformations, Sea level rise, Marine biodiversity change, Acculturation, Operational Foresight, International University of the Sea.

MOTS-CLÉS. Dérèglements de l'océan, Montée du niveau des mers, Changement de la biodiversité marine, Acculturation, Prospective opérationnelle, Université Internationale de la Mer.

The Université Internationale de la Mer : origins and activities

The Université Internationale de la Mer (UIM -- International University of the Sea) was founded in 1986 to provide foreign students coming to France with basic knowledge of marine life and maritime activities. It was the result of a partnership between the Collége International de Cannes (CIC -- International College of Cannes) and the Centre d'Études et de Recherches de Biologie et d'Océanographie Médicale (CERBOM -- Center for Studies and Research in Biology and Medical Oceanography) based in Nice. The former had been initiated by Paul Valéry in the 1930s to familiarize foreign students with the French language and literature. The latter, a unit of the Institut National pour la Santé et la Recherche Médicale (INSERM -- National Institute for Health and Medical Research), had been founded in 1960 by a doctor (neurosurgeon), Maurice Aubert, who wanted to combine his expertise with his passion for the sea[1]. Thus, in its early days, the UIM raised awareness of marine and maritime

[1] For a history of CERBOM and a biography of its founder, see the foreword to the book *Systèmes d'information des micro-organismes marins*, published by ISTE (2021)

issues among several classes of dozens of foreign students, particularly Americans. The premature death of its founder at the Collège International de Cannes then put the project on hold.

The CERBOM, for its part, continued its work linking health and the sea: fundamental research, particularly on the biological balance of the seas and the antibiotic properties of the marine environment; applied research on sea pollution prevention and treatment, thalassotherapy, etc.; and various inventories on the state of the seas surrounding France and bathing the Mediterranean coasts (hydrological, bacteriological, and chemical aspects)[2].

Following the closure of CERBOM in the mid-1990s, the UIM and its founder were welcomed by the municipality of Cagnes sur mer, in the port of Cros de Cagnes, in the fishermen's guild building, which had then been renovated. The UIM, while inheriting the scientific work of the CERBOM, then developed as an educational structure for a wide range of audiences: welcoming students in partnership with departments of the University of Nice-Sophia Antipolis (marine biology, marine geography), training maritime professionals (captains and seamen, aquaculture technicians), and familiarizing local schoolchildren with the sea.

Figure 1. *View of the sea from the beach at Cros de Cagnes. In the background on the left side is the landing track of Nice airport. The sea is blue-green due to the inflow of water from the Var River. The sea becomes darker blue on the horizon line. Photo credit: Fabienne Goux-Baudiment*

[2] All of CERBOM's publications, supplemented by those of the UIM, are included in a book entitled "*Un demi-siècle d'étude du milieu marin appliquée à l'homme*" (Half a century of marine research applied to humans, 1958-2008). The book (190 pages) is organized as an Index that lists and summarizes 585 articles and papers, 10 books, and 25 inventories resulting from oceanographic campaigns. It is available on the website of the Université internationale de la Mer. https://www.univ-mer.org

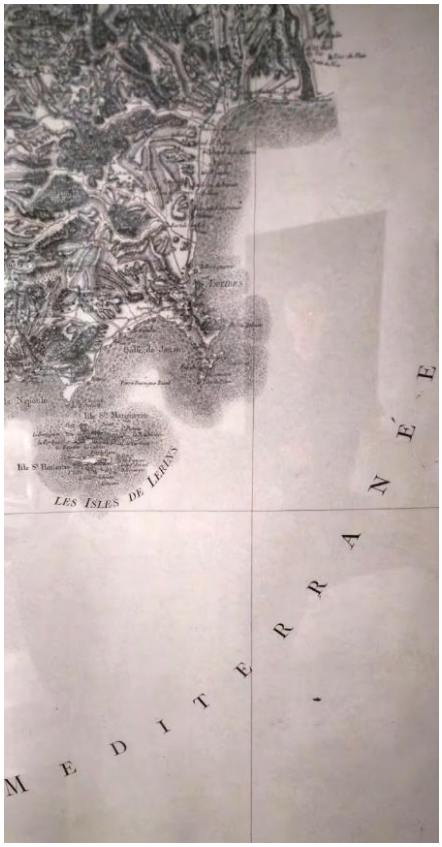

Figure 2. *The UIM is located on the northern coastline of the Baie des Anges, nearby the Var river, positioned on the upper right side in this excerpt from a Cassini map of Provence. Cassini maps —also known as Académie maps—were created in the 18th century and covered the whole of France. They provided remarkable detail of the coastlines and relief thanks to geodetic triangulation methods that were highly innovative for the time. Note that the Nice coastline is not included in the map, as the city joined France only in 1860. Photo credit: Fabienne Goux-Baudiment*

Following the retirement of its founder in 2008, the UIM gradually reduced its activities to training seamen and captains only. It was relaunched in 2018 at the request of the municipality, consolidating these maritime training courses and developing distance learning courses on “blue economy” for French-speaking Africa, in partnership with Senghor University, an operator of the Francophonie, as well as organizing various activities to promote ocean awareness: conferences, presentations in middle schools, seminars for elected officials, etc.[3]

On the occasion of the third United Nations Ocean Summit (UNOC3, Nice, June 2-13, 2025), one month before its opening, the UIM organized a conference entitled “Ocean 2100” focusing on the long-term challenges and risks facing the ocean[4]. Some 20 high-level experts focused in particular on the adaptation of coastal communities to sea level rise, the protection of biodiversity and marine resources, and the mobilization of stakeholders to address these issues. This conference, while contributing to preparatory discussions for the Summit, should open up new activities for the IUM, particularly in the areas of ocean acculturation and operational foresight for the seas and coastlines.

The relationship between the ocean, the arts, and science has played and will continue to play an important role in the UIM's activities.

[3] See the website https://www.univ-mer.org

[4] https://www.univ-mer.org/conference-ocean-2100-enjeux-et-risques-mercredi-7-mai-2025/

Art, science, and ocean acculturation

Art has always played an essential role in stimulating human societies' interest in the ocean. Think of the poets (Homer and the Odyssey, Virgil and the Aeneid), or closer to home, painters (Turner and his seascapes, Boudin and his views of the Normandy coast), and musicians (Debussy and La Mer). Today, artists are sailing aboard the schooner Tara, accompanying it on its voyages around the world to show and convey the most remote places visited during its expeditions[5].

But we can go further by merging art and science in the representation of marine life: the Nice-based naturalists and painters Risso, Barla and Fossat perfectly depicted fish, shells, as well as plants, land animals, and more[6]. This alliance between art and science was reflected on the walls of CERBOM in black and white photographs of plankton adorning the laboratory walls, and a large mosaic in the entrance to the building depicting stylized planktonic species. Advances in photographic techniques and methods of observing the marine environment now make it possible to produce works, such as those of Christian Sardet, of exceptional beauty and evocative power[7].

In its acculturation activities, the UIM attaches great importance to the quality of representations of the ocean in its interventions, particularly through the images used in meetings with young people or in MOOCs for distance learning. However, it has placed particular emphasis on videography. Since The Silent World, Commander Cousteau's pioneering work, cinema has become the primary tool for engaging all audiences in the sea, its wonders and its secrets. The UIM has therefore set up a video library on its website containing more than 300 works (three quarters of which are in English) covering a wide range of subjects, from marine biology to oceanography and geopolitics, and covering different regions of the world. This video library is freely accessible[8].

The beauty of the ocean – whatever the way you experience it – is, in fact, the main reason why we are interested in it, the force that draws you to it, the power that pulls you into its depths... or simply onto the beach near the waves. This reality is well evoked by Isabelle Autissier in a radio program (in 2016) devoted specifically to “the beauty of the ocean”[9]. She points out the psychological benefits that this empathetic relationship with the sea brings to individuals, benefits that have been confirmed by neurological observations. It is through emotion and the senses that acculturation to the ocean begins, as with all things.

By developing an intimate relationship with the ocean, anyone can be drawn into a genuine scientific activity. This is the principle of participatory science. In this regard, the UIM has been a pioneer in organizing the *Delphis* operation from 1997 to 2007, bringing together every year on mid-August, a hundred recreational boaters willing to observe cetaceans between Corsica and France. Each boater was allocated a square mile for his/her observations, which were accompanied by wind and current readings, temperature measurements, and water and plankton samples (using a small ad hoc net). The scientific contributions of these campaigns helped lay the foundations for the PELAGOS marine sanctuary, one of the first marine protected areas in the Mediterranean and in the world.

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[5] https://www.104.fr/fiche-evenement/la-grande-expedition.html

[6] See Christian Sardet's article at https://www.openscience.fr/No-Spe-Villefranche

[7] As part of the Becoming Ocean exhibition at the Villa Arson in Nice: https://villa-arson.fr/programmation/expositions/becoming-ocean-a-social-conversation-about-the-ocean/

[8] https://www.univ-mer.org/videotheque-video-library-oceans-mers-et-littoraux/

[9] https://www.radiofrance.fr/franceinter/podcasts/les-recits-d-isabelle-autissier/la-beaute-de-l-ocean-8080486

Science and the arts in the face of ocean issues

Beyond acculturation, the question is how individual and collective behavior can evolve in the face of the major challenges and risks evoked above, resulting from human activities: rising sea levels, declining marine biodiversity, increasing pollution, etc. This requires field surveys and research to identify and measure the various factors that influence these behaviors: sensory and emotional contact, as we have seen, but also the places where people live, with their topology, history and maritime identity, social and cultural norms, ecological awareness and membership of groups committed to nature protection, experiential learning (participatory science)[10].

These surveys, in which the UIM should be involved, lead to recommendations on measures to be taken or supported by public authorities where art in its various forms plays an important role: scenarios and narratives about the future, creation of narratives[11] and symbols, storytelling, artistic innovation, virtual and augmented reality, etc. Clearly, these analyses highlight significant differences between cultures in terms of their relationship with the ocean and the role that the arts can play in changing these relationships in a desirable direction.

Figure 3. *This model of an Azores sailing fishing boat was carved over fifty years ago by a local artist from a whale bone. He would probably not be able to use this material today, as hunting large cetaceans has been banned to protect them. This illustrates the pressing issues facing the global community in the face of declining marine biodiversity. Photo credit: Fabienne Goux-Baudiment*

On a more general level, the reintroduction of art alongside science in the approach to the ocean is part of a movement challenging the Anthropocene, seen as the destruction by humans of their biotope, and the institutions, behaviors, and mentalities that have accompanied this behavior:

[10] Stoll-Kleemann, S., Nicolai, S. (2024): *Climate-Just Behavior: Foundations and Transformational Approaches*. Routledge Focus. See also Professor Susanne Stoll-Kleeman's contribution to the UIM Ocean 2100 conference on May 7, 2025, Acculturation to the Ocean and Behavioral Change, publication in preparation.

[11] Including comics, such as those developed by the French agency in charge of alerting on sea level rise (CEREMA) and presented at the UIM conference Ocean 2100.

compartmentalization of disciplines, the unchallenged domination of capitalism, colonialism, etc. This was the subject of a symposium held at the Museum National d'Histoire Naturelle on February 12, 2023, whose contributions were the subject of "reflections on the links between the ocean, the arts, and science"[12].

This movement has given rise to a wide range of transdisciplinary initiatives and research, bringing together the life and environmental sciences, the social and behavioral sciences (anthropology, sociology, ethology), and of course the arts, from the most traditional (dance, song, etc.) to the most contemporary (image and video generation using artificial intelligence). Some of this work is leading to new methods and hypotheses in our understanding of the marine environment, for example on the biomineralization of shells or the bioluminescence of organisms in the deep sea[13].

Ocean and coastline foresight between art and science

Finally, it is worth mentioning an activity that combines the spirit of science and the spirit of art.In the face of long-term issues, foresight is essential. Even if the ocean is one and must be approached as such, in order to be operational, foresight must be conducted at the territorial level, including at the most granular level, that of the municipality. French institutional mechanisms should facilitate such exercises, even though they were designed for "standard" territories rather than for sea-based territories as such[14].

Foresight, as a method to depict the future of human societies, is based on careful and in-depth observation of reality through monitoring activities to identify major trends and structural factors, as well as weak signals that are decisive for the future of the societies in question. It then proceeds to exercise the imagination to think through various possible developments—scenarios, or even a single narrative, if the future is sufficiently clear or if one is bold enough. Finally, it leads to policy recommendations to be implemented to achieve the desired futures. Thus, foresight consists of three stages: understanding, anticipating, and proposing. The first stage is a kind of scientific process. The second stage is more like an artistic exercise, drawing on imagination, intuition, and a form of empathy with the societies being observed to compensate for the limitations of reality. Finally, the third stage is political in the noble sense of the term, as it requires the populations and authorities to take ownership of their future in some way. Foresight thus appears at the crossroads of science, art, and politics, as several of its initiators agree[15].

The UIM intends to promote this operational foresight at different territorial levels, including that of entire seas, such as the Mediterranean, by collaborating with established scientific, foresight, political,

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[12] https://stm.cairn.info/revue-natures-sciences-societes-2024-1-page-69?lang=fr

[13] See the section "Scientific inspirations and mediations" in the above-mentioned article published in Cairn.

[14] Ten-year territorial foresight studies are required in the preparation of regional master plans ("SRADDET"), and the Development Councils (Conseils de Développement) set up at the level of urban communities are specifically responsible for forward thinking (in an advisory capacity). In order to clearly put the focus on the sea-coastline interface, the term "merritoires", as opposed to "territoires" which relates to the land (terre), is proposed by Fabienne Goux-Baudiment (contribution to the UIM Ocean 2100 conference, May 7, 2025).

[15] Notably Thierry Gaudin, *Qu'est-ce que la Prospective*, Que Sais-je, 2013; and Bertrand de Jouvenel http://www.laprospective.fr/dyn/francais/memoire/texte_fondamentaux/lart-de-la-conjecture-b-de-jouvenel.pdf

and other institutions[16]. This foresight must be combined with acculturation efforts, in particular with MOOCs incorporating relevant information on the countries and regions concerned.

Figure 4. *This map of the western Mediterranean, dating from the Renaissance, is surprising because the north is located on the right side of the frame and not at the top, as it became standard a few centuries later. Nevertheless, the overall cartography—including the shapes of the coasts, bays, and capes and their positioning—is relatively close to reality. Photo credit: Fabienne Goux-Baudiment*

Conclusion

Ultimately, for human societies to take back control of their future in the face of ocean movements, they will need to take steps that are both scientific and artistic, drawing on both sides of the brain, so to speak—the left side, which is the seat of reason, and the right side, which is the seat of emotion. This takeover also requires mobilization at all levels of granularity around which societies are organized, from the individual to the global community.

[16] Collaborations are envisaged with the IPOS (International Panel for Ocean Sustainability) platform, the Plan Bleu pour la Méditerranée, and the 2100 Foundation.