

new horizons
Conference
8 September 2025



Welcome Message

The Interdisciplinary Centre for Marine and Environmental Research (CIIMAR) celebrates its 25th anniversary on 8 September 2025.

Over the past 25 years, CIIMAR has positioned itself as a **leading institution in advancing knowledge and solving the major societal and economic challenges of our time**, alongside the sustainability of the country's and the planet's natural resources. It **pioneered the development of a blue bioeconomy roadmap for our country**, and the centre's research has **contributed to the development of public policies in biodiversity and the environment**.

This anniversary is celebrated with an eye to the future, with a commemorative conference under the motto **New Horizons**, bringing together members of the government, the scientific and academic community, industry, policy makers and esteemed members of civil society to **celebrate the scientific advances achieved and discuss future challenges in the field of marine and environmental sciences**. The programme includes presentations by experts, opportunities to share the discoveries of the last two and a half decades, and reflection on science for the coming decades.



Best regards,

Joana Xavier, Pedro Leão, Filipe Castro

Commissariat of CIIMAR 25 years celebrations

Agenda



09:00h **Registration**

09:30h **Welcome addresses**

10:15h **Roots of Knowledge: a 25 years' journey**

11:00h **Coffee-break**

11:30h **Science for Society: transforming the present**

13:00h **Lunch**

14:30h **New Horizons: envisioning the future**

16:00h **Closing addresses**

16:30h **Cocktail**

Detailed Program

09h00 – 09h25: Registration

09h30 – 10h15: Opening Session - welcome addresses

Joana Xavier, Commissioner of CIIMAR 25th Anniversary, Portugal

Vitor Vasconcelos, President of the board of directors of CIIMAR, Portugal

Pedro Rodrigues, Vice-dean for Research and Innovation of the University of Porto, Portugal

Madalena Alves, President of the Board of Directors of the Foundation for Science and Technology

Salvador Malheiro, Secretary of State for Fisheries and Maritime Affairs, Portugal

10h15 – 11h00: Roots of Knowledge: a 25 years' journey

Vitor Vasconcelos, President of the Board of Directors of CIIMAR, Portugal

Emídio Gomes, Rector of the University of Trás-os-Montes and Alto Douro, Portugal

Assunção Cristas, Professor at NOVA School of Law, Portugal

João Coimbra, Emeritus Professor and founding member of CIIMAR, Portugal

11h00 – 11h30: Coffee-break

11h30 – 13h00: Science for Society: transforming the present

Lighting up the abyss: Gathering knowledge to understand, protect and restore the deep ocean

Prof. Alex Rogers, Deputy Director Strategic Science Programmes and Partnerships, National Oceanography Centre, United Kingdom.

The ocean comprises a varied seascape, rich in seamounts, ridges, canyons and trenches, harbouring a high biodiversity. Human activities, such as deep-sea trawling, have already destroyed or damaged Vulnerable Marine Ecosystems. Society has responded by trying to regulate such industries through voluntary measures, guidelines and spatial protection measures. Until now such measures were difficult to implement in Areas Beyond National Jurisdiction but the new Biodiversity Beyond National Jurisdiction Agreement will provide the legal framework to protect biodiversity in the entire deep sea for the first time. New or incipient industries like deep-sea mining need baseline knowledge on deep-sea ecosystems to understand and manage their potential impacts. Such knowledge is critical in establishing networks of spatial conservation measures in the deep sea. Where ecosystems are already damaged passive or active restoration will be needed. Human understanding of how to successfully restore deep-sea and other marine ecosystems is in its infancy and so must be a priority for marine scientists.

Novel tools for preventing and mitigating climate change effects in aquaculture

Benjamin Costas, Principal Investigator, CIIMAR, Portugal.

Disease prevention and sustainability are issues of high research priority for European aquaculture. Public awareness of aquatic animal health and welfare leads to the increased attention of policy-makers, stakeholders, scientific community and the consumers into new methods for immunization and improvement of animal welfare.

Our research through IGNITION aims to unveil new knowledge regarding animal welfare in the context of climate change and propose new tools to mitigate the adverse effects of stress. An improvement in

animal welfare will translate in higher-quality farmed animals thus improving farming productivity and sustainability performance. Special emphasis is given to the study and discovery of new non-invasive biomarkers of health and welfare, which are in turn allowing the development of biosensors and disease prediction through machine learning approaches. The tools developed in IGNITION will be able to avoid the colonization and spread of pathogenic microorganisms, whilst reducing the use of veterinary drugs and minimizing the environmental impact of the industry.

Ancient DNA: Unlocking the history of marine resource exploitation

Paula Campos, Principal Investigator, CIIMAR, Portugal.

Ancient DNA (aDNA), the recovery of genetic information from historical, subfossil, and fossil specimens, opens a window into the past and can provide us with a variety of insights that cannot be obtained from modern specimens alone. This genetic material can be recovered from a myriad of different sources, including bones and teeth, hair, preserved soft tissues, coprolites, environmental samples (such as sediments and ice cores), preserved plant material, herbarium specimens like seeds, and even dental calculus. Since the first ancient DNA study, which sequenced part of the mitochondrial DNA of an extinct quagga, aDNA research has undergone a massive revolution. This progress has been driven largely by the advent of next-generation sequencing, alongside advances in experimental and analytical methods.

In this context, we present two examples that show how ancient DNA can shed light on pre-industrial sardine exploitation and Medieval whaling along the Iberian Peninsula's coast.

Scaling Ocean Science: From spin-off to global impact

Helena Amaro, Research and Development Manager at ISS - Inclita Seaweeds Solutions.

Founded in 2018, ISS – Inclita Seaweed Solutions was the first spin-off to emerge from CIIMAR, transforming seaweed research into real market solutions. By developing natural, sustainable ingredients, ISS delivers

high-performance, low-carbon alternatives for industries ranging from cosmetics and nutraceuticals to biostimulants, pet care, and food & beverage. What started with two experienced scientists, Ana Catarina Guedes and Isabel Costa, and two investors, Jorge Fernandes and Diogo Bastos, has grown into a global company that supplies seaweed-based ingredients across three continents, through its proprietary portfolio and collaborative co-development services.

By the end of 2025, the launch of ISS's pilot plant will mark a key milestone: expanding production capacity to a new scale, enabling the company to grow its partnerships with leading brands and enter new markets. From seaweed research to real solutions, ISS is showing the world that the blue economy can be both sustainable and profitable.

Unlocking Microbial Chemistry to Tackle Global Challenges

Dora Ferreira, PhD candidate at Naicons Srl (Milan, Italy) and the MAGic-MOLFUN Doctoral Network (funded by the Marie Skłodowska-Curie Actions).

Natural products (NPs) - metabolites produced by living organisms - have long been central to drug discovery, crop protection, and other biotechnological applications. Yet, declining hit rates and frequent rediscovery in traditional bioactivity-guided approaches led to declining interest in the field. Recent technological advances, however, are revealing the vast untapped biosynthetic potential of diverse organisms and offering powerful new ways to access it, renewing momentum in NP research.

Based on this, in my Master's thesis (CIIMAR/BYT+ program), I modulated culture conditions in cyanobacteria to expand their chemical space, uncovering putative novel metabolites. In my current PhD work (Naicons/MAGic-MOLFUN project), I combine genomics and metabolomics to investigate a rare actinomycete genus. Known compounds newly associated to the genus were identified and new metabolites are undergoing characterization, some with potent antibacterial activity against resistant strains. These findings exemplify how natural products are experiencing a resurgence, offering sustainable solutions to pressing global challenges.

Q&A session

13h00 – 14h30: Group photo and lunch

14h30 – 16h00: New Horizons: envisioning the future

Addressing the Three Grand Challenges in Ocean Research: Achieving Net Zero, Protecting Biodiversity and Sustaining Bioresources

Anya Waite, CEO and Scientific Director of the Ocean Frontier Institute, Canada.

The future health of the ocean is critical for life on earth. I identify three grand challenges where ocean research is urgently needed to support the best possible environmental, policy and economic outcomes: Net Zero, Biodiversity, and Sustainable Bioresources. Each of these embeds a set of balancing acts where ethical / environmental action and human benefit must be carefully weighed. The research enterprise must step up to meet these challenges, while supporting the best possible research and data flows supporting a sustainable ocean future.

CIIMAR 2050 – Looking beyond our blue horizon

Vitor Vasconcelos, President of the Board of Directors of CIIMAR, Portugal.

Main research focus on cyanobacteria secondary metabolites and their uses: toxins and molecules with biotechnological applications. Responsible for the LEGE culture collection with more than 2000 strains of cyanobacteria and microalgae. Director of the Doctoral Program in Marine Biotechnology and Aquaculture (U Porto and U Minho). Project evaluator of the Innovation Agency and various international research funding institutions.

In the past 25 years, CIIMAR evolved from a research center focused on marine biology and aquaculture to an interdisciplinary center that aims to understand the functioning of the ocean and to develop tools to better observe it and to promote its sustainable exploitation. In this way, our mission comprises the promotion of excellent transdisciplinary research, technological development, advanced training, support for public policies, and ocean literacy, contributing to advances in scientific knowledge and sustainability of Ocean and coastal environments.

CIIMAR challenges for the next 25 years aim to answer the gaps and the opportunities posed by a large undiscovered Ocean and the environmental, economic and societal needs. We should not just help the citizens to look beyond the blue horizon but altogether create tools to better respect the Ocean while using it in a sustainable way. Actions regarding the implementation of observatories, digital ocean services, living labs, conservation and restoration strategies, Atlantic network capitalization, Aquaculture demonstrators, Blue Biotechnology scale up pipelines, will be fundamental to push marine science & tech over the next 25 years.

UN Ocean Decade scientific challenges

Telmo Carvalho, Adjunct coordinator of the Portuguese Ocean Decade National Committee, Portugal.

The “Ocean Decade” is a framework for creating and strengthening connections among communities working to study, conserve and sustainably use the ocean and its resources. The Ocean Decade focuses on developing the global scientific capacity to generate and share knowledge that directly contributes to meeting the goals of the 2030 Agenda for Sustainable Development and other relevant global legal and policy frameworks.

For Co-designing the science for the Ocean Decade, key challenges have been identified for the decade.

The Challenges concisely state the most urgent priorities for the Ocean Decade. They inform the framework for the design and implementation of the initiatives carried out during the Ocean Decade. They unite

Decade partners in collective action at the global, regional, national and local levels, and may evolve throughout the Decade. Each Challenge will contribute to the achievement of one or more of the Ocean Decade Outcomes. The goal of this presentation is to identify the 10 Decade Challenges and briefly discuss what is the stage of implementation in Portugal.

The role of the European Marine Board in supporting Ocean Science and Policy

Fiona Grant, Chair of the European Marine Board, Ireland.

The European Marine Board provides a Pan-European platform for its member organizations to develop common priorities, to advance

marine research and to bridge the gap between science and policy, to meet future marine science challenges and opportunities. Adopting a strategic role, the Board provides a unique forum to develop marine research foresight, initiating state-of-the-art analysis and studies and translating these into clear policy recommendations to national agencies and governments as well as to the European institutions.

The talk will outline the principles of how the EMB meets the objective of bridging the gap between science and policy. The recommendations from the foresight report Navigating the Future VI will be presented together with the most recent publications and upcoming Expert Working Groups. Some observations on the Ocean Pact and the next iteration of the Framework Programme will be shared with the audience and panel.

Panel discussion

16h00 – 16h30: Closing addresses

António M. Cunha, President of the Norte Portugal Regional Coordination and Development Commission (CCDR-N), Portugal.

Marta Pontes, Councillor of Matosinhos City Hall, Portugal.

Luísa Valente, Member of the Board of Directors of CIIMAR, Portugal.

16h30 – 18h00: Cocktail

Keynotes and Guest Speakers

Opening Session - welcome addresses



Pedro Rodrigues

*Vice-dean for
Research and
Innovation of the
University of Porto,
Portugal*



Madalena Alves

*President of the
Board of Directors of
the Foundation for
Science and
Technology*



Salvador Malheiro

*Secretary of State
for Fisheries and
Maritime Affairs,
Portugal*

Science for Society: transforming the present

Lighting up the abyss: Gathering knowledge to understand, protect and restore the deep ocean

Alex Rogers | *Deputy Director Strategic Science Programmes and Partnerships, National Oceanography Centre, United Kingdom.*



Alex is a marine ecologist of more than 30 years' experience who is interested in how biodiversity is distributed in the ocean, especially in the deep sea and on mesophotic tropical coral reefs. He has worked with governments, intergovernmental and non-governmental organisations on human impacts in the ocean and how to manage human activities to mitigate or reduce degradation of marine ecosystems. This has included work on the development of the sustainable blue economy in low- and middle-income countries and advice to negotiators for the BBNJ Agreement. Alex is leading strategic development of science at the UK's National Oceanography Centre.

Novel tools for preventing and mitigating climate change effects in aquaculture

Benjamin Costas | *Principal Investigator, CIIMAR, Portugal.*



Benjamín holds a PhD in Animal Science by the University of Porto and is currently Principal Researcher at CIIMAR and Head of Aquatic Animal Health, a young and strongly motivated team highlighting nutritional immunology as main research line. Dr. Costas is passionate about aquatic animal health and welfare, with specific focus on the study of host-pathogen interactions and the neuro-endocrine/immune crosstalk. Remarkably, Dr. Costas is currently coordinating two Horizon Europe grants – IGNITION and GrinnAqua. More recent research is targeting novel strategies to improve fish disease resistance and welfare as well as non-invasive biomarkers of animal health and welfare.

Ancient DNA: Unlocking the history of marine resource exploitation

Paula Campos | *Principal Investigator, CIIMAR, Portugal.*



Paula holds a PhD in Ancient DNA and Evolution from the University of Copenhagen, where she also worked as a postdoctoral researcher and later as Assistant Professor at the Natural History Museum. Since 2019, she has been a Researcher at CIIMAR, University of Porto. Her work focuses on the long-term relationship between human societies and marine ecosystems, using ancient DNA to study how human exploitation has shaped marine species through time. She leads the PALEOMAR group, integrating archaeological, genomic, and ecological data to reveal the historical roots of marine resource use.

Scaling Ocean Science: From spin-off to global impact

Helena Amaro | *Research and Development Manager at ISS - Inclita Seaweeds Solutions.*



Helena holds a PhD in Biomedical Sciences and is a microbiologist with two decades of experience in blue biotechnology. She has pioneered methods in algal biotechnology, focusing on algae cultivation, bioactive compound extraction, and the sustainable valorization of algal metabolites. As Research and Development Manager at Inclita Seaweed Solutions, she leads the creation of seaweed-based extracts and ingredients for the cosmetics and nutraceutical industries, promoting algae as a cornerstone of the sustainable blue bioeconomy.

Unlocking Microbial Chemistry to Tackle Global Challenges

Dora Ferreira | *PhD candidate at Naicons Srl (Milan, Italy) and the MAGic-MOLFUN Doctoral Network (funded by the Marie Skłodowska-Curie Actions).*



Dora Ferreira is a PhD candidate at Naicons Srl (Milan, Italy) and the MAGic-MOLFUN Doctoral Network (funded by the Marie Skłodowska-Curie Actions). Dora holds a BSc in Medicinal Biotechnology from the Polytechnic of Porto and a MSc in Applied Microbiology from the Catholic University of Portugal. During her MSc thesis at CIIMAR (University of Porto), she worked on natural products from marine cyanobacteria, focusing on the modulation of culture conditions to uncover novel chemistry. Her current work focuses on combining metabolomics and genomics data to discover new compounds from rare actinomycetes.

11h30 – 13h00: New Horizons: envisioning the future

Addressing the Three Grand Challenges in Ocean Research: Achieving Net Zero, Protecting Biodiversity and Sustaining Bioresources

Anya Waite | *CEO and Scientific Director of the Ocean Frontier Institute, Canada.*



Anya is the chief executive officer and scientific director of the Ocean Frontier Institute, led by Dalhousie University. She was a post-doctoral scholar at Woods Hole Oceanographic Institution and a Winthrop Professor in Australia before becoming Section Head of Biological Oceanography at the Alfred Wegener Institute. Dr. Waite has won numerous teaching excellence awards and was recently awarded Japan's Yoshida Award for oceanographic upwelling research. Previously, Dr. Waite served as co-chair of the Global Ocean Observing System, Canada's representative on the World Meteorological Organization's Greenhouse Gas Study Group, and the associate vice-president of research (ocean) at Dalhousie.

CIIMAR 2050 – Looking beyond our blue horizon

Vitor Vasconcelos | *President of the Board of Directors of CIIMAR, Portugal.*



Victor has a PhD in Biology at FCUP, Porto. Full Professor - Faculty of Sciences of Porto University and director of CIIMAR - Interdisciplinary Center of Marine and Environmental Research. Member of the Scientific Council of the Portuguese Science and Technology Foundation (FCT) – Natural and Environmental Sciences. Member of the Scientific Council of the National Natural History Museum of France. Director of the Group of Blue Biotechnology and Health of CIIMAR.

UN Ocean Decade scientific challenges

Telmo Carvalho | *Deputy Coordinator of the Portuguese Ocean Decade National Committee, Portugal.*



Telmo is Deputy Coordinator of the Portuguese Committee for the UN Ocean Decade (2021–2030) and a Board Member of the Portuguese Institute for the Sea and Atmosphere (IPMA). With a background in anthropology and science policy, he has dedicated his career to connecting marine science with policy and society. He previously served as Advisor to the Minister of the Sea and coordinated Portugal's Ocean Office at FCT. Telmo has represented Portugal in numerous international forums, including the OECD, European Marine Board, and UN Ocean Conference, contributing extensively to science policy and ocean governance.

The role of the European Marine Board in supporting Ocean Science and Policy

Fiona Grant | *Chair of the European Marine Board, Ireland.*



Fiona is Chair of the European Marine Board and National Contact Point for Horizon Europe Cluster 6 and the Mission to Restore our Ocean and Waters by 2030. A marine geologist and geophysicist by training, she works at the Marine Institute in Ireland, where she manages international programmes and fosters collaboration between Irish researchers and global marine science initiatives. Through her leadership, Fiona supports Ireland's engagement in the UN Ocean Decade and promotes strong European cooperation in ocean research and policy.

16h00 – 16h30: Closing addresses



António M. Cunha

President of the Norte Portugal Regional Coordination and Development Commission, Portugal



Marta Pontes

Councillor of Matosinhos City Hall, Portugal



Luísa Valente

Member of the Board of Directors of CIIMAR, Portugal

Conference Moderators



Joana Xavier



Pedro Leão



Filipe Castro

Commissariat of CIIMAR 25 years celebrations

Useful Information

Date

September 8, 2025

Location

CIIMAR Headquarters – Leixões Cruise Terminal

Av. General Norton de Matos s/n

4450-208 Matosinhos

Access and Security

CIIMAR is located within a port area with access control. You will need to provide your name and indicate that you are attending the “New Horizons” conference to the security guard at the entrance. We recommend that you bring identification to facilitate the process of accessing the Port of Leixões.

Parking

Free parking is available next to the CIIMAR headquarters building, within the Cruise Terminal complex. Spaces are subject to availability, so we advise you to arrive early.

Registration

Opening hours and registration: 9:00 a.m. on the 3rd floor of the building. The conference will begin at 9:30 a.m.

Contacts - CIIMAR 25th Anniversary Committee

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25 years of Marine and Environmental Science driving a sustainable future

Thank you for joining us!