

>>> NEWSLETTER 1 <<<



BlueShellfish



February 2024

BlueShellfish

Solutions to prevent and mitigate the impacts of HABs in Aquaculture and Fisheries, in the context of global warming

>>> **BlueShellfish** aims to bring together specialists from different areas of knowledge who will develop joint research activities, which will collectively contribute to bring innovative solutions to fisheries and aquaculture industries, to mitigate the impact of HABs.

In this Edition

- 🐚 Events know what we've been doing
- 🐚 Secondments know who we are



Funded by the European Union. Views and opinions expressed are however those of the authors only and do not necessarily reflect those of the European Union or European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

Project 101086234 — BlueShellfish

EVENTS

➤➤➤ PREVENT AND MITIGATE THE IMPACTS OF MARINE BIOTOXINS ON PUBLIC HEALTH AND BIODIVERSITY IN THE FACE OF GLOBAL CHANGES

29th June 2023

In this seminar, participants engaged in a scholarly exploration of marine science and intellectual discourse.

Guided by Prof. Dr. Daúde Jamal and Prof. Dr. Jaime Mandlate, the unveiling of Dr. Pedro Reis Costa's "BlueShellFish" project provided a methodological lens into marine biodiversity. Insights from Dr. Cáfia Bartilotti, Dr. Jorge Lobo Arteaga, Prof. ^a Dr. Aidate Mussagy, and Dr. Catarina Churro delved into the complexities of historical microalgae blooms and the impact of toxic phytoplankton on public health. Isidro Tamele underscored the imperative for a monitoring plan in Mozambique.

Past interactive dialogues, insights from previous voyages, and the historical intersection of biotoxins and climate change with Dr. Pedro Reis Costa enriched the scientific discourse. Prof. Doutor Eutilério Chaúque's conclusion echoed knowledge beyond the historical confines of the seminar.

Stay tuned for more scientific endeavors in the maritime realm.

PROJETO BLUESHELLFISH



PREVENIR E MITIGAR OS IMPACTOS DAS BIOTOXINAS MARINHAS NA SAÚDE PÚBLICA E NA BIODIVERSIDADE FACE ÀS ALTERAÇÕES GLOBAIS

SEMINÁRIO



29 JUNHO 2023
8:30 ÀS 11:35 H

FORMATO VIRTUAL. INSCRIÇÃO NECESSÁRIA

SEMINAR

WORKSHOP IN MOLECULAR TECHNIQUES – IDENTIFICATION OF MARINE ORGANISMS

3, 4 and 10th July 2023

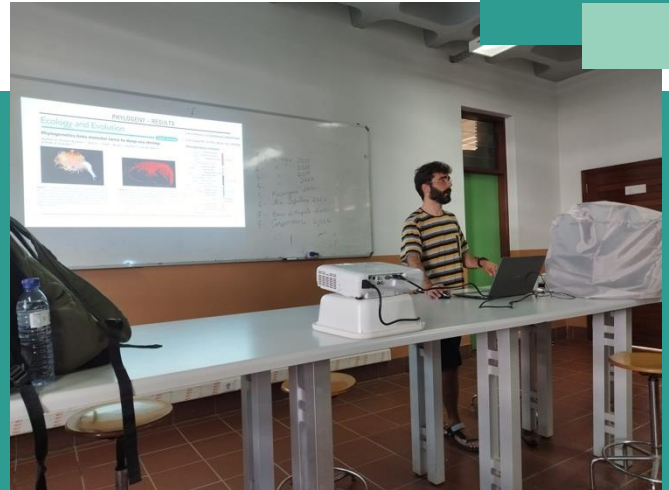
WORKSHOP



Our recent workshop on molecular techniques for marine organism identification was a resounding success! Led by experts Dr. Cátia Bartilotti, Dr. Jorge Lobo Arteaga, and Dr. Catarina Churro from IPMA, MARE and CIIMAR, the sessions covered marine zooplankton, integrative taxonomy, bioinformatics, toxic phytoplankton, and more.

Participants enjoyed hands-on workshops, delving into practical aspects such as morphological identification, DNA barcode editing, and extraction techniques.

A big thank you to all who contributed to making this workshop a valuable learning experience!



➤➤➤ FOOD SAFETY IN FISHERY PRODUCTS - CHALLENGES IN MOZAMBIQUE AND PORTUGAL

24th October 2023

The seminar "Food safety in fish products: challenges in Mozambique and Portugal" took place at IPMA, organized as part of the Blueshellfish project. Over 50 people attended the seminar, which was organized in a hybrid mode, in-person and online. After the welcoming from IPMA's Director, the issues posed by heavy metals, pesticides and biotoxins in seafood from Mozambique were discussed by Professor Eutilério Chaúque (UEM). Dr Susana Rodrigues (IPMA) presented a communication about emerging biotoxins, ciguatoxins, in Portugal. Professor Valera Dias (UEM) highlighted a recent interest in Mozambique related with production of macroalgae and Dr Stela Fernando (Oceanographic Institute of Mozambique) presented a view about fisheries dynamics and seafood safety in Mozambique. At the end fruitful discussion was promoted among attendees.

Susana Rodrigues (IPMA) explored ciguatera in Portugal, Valera Dias (UEM-DCB) shared insights on seaweed diversity, and Stela Fernando (Instituto Oceanográfico de Moçambique) covered fisheries dynamics.



Discover more [here!](#)



The event concluded with a concise debate, fostering collaborations between Portugal and Mozambique, guided by Eutilério Chaúque and Pedro Reis Costa.

PRINCIPLES OF HIGH-THROUGHPUT PROTEOMICS RESEARCH COURSE

13–15th December 2023

In our recent Proteomics course, we delved into the research discipline dedicated to understanding proteins in biological samples. The course covered protein expression, identification, and characterization of post-translational modifications (PTMs), highlighting their relevance to health and ecotoxicology.



Throughout the course, participants, including graduated students, researchers, and professors, gained practical insights into Proteomics methodologies. From sample preparation to data analysis, the curriculum offered hands-on training in navigating complex proteomic data from shotgun studies.

Principles of High-throughput Proteomics Research Course

13th -15th December 2023

CEMUP & ESS-IPP

More info and Registration here:

 For more information: info@blueshellfish@gmail.com

Organized by: **ciimar** **LIU** LINKÖPING UNIVERSITY

With the support of: **U.PORTO** **P.PORTO**

Supported by the HORIZON 1.2 - MSCA-RISE project BlueShellfish GA No. 10108234

WORKSHOP

If you missed the course, don't worry. Stay tuned for future opportunities to enhance your understanding of Proteomics, mass spectrometry, and protein research.

[Discover more here!](#)

Principles of High-throughput Proteomics Research Course
13th -15th December 2023

Dr.ª Maria Turkina
LIU
Speaker

Organized by: **ciimar** **LIU** LINKÖPING UNIVERSITY
With the support of: **U.PORTO** **P.PORTO**

Program

Day 1, 13th December (location: ESS-IPP Porto)

9:00 - 13:00 Introduction to proteomics sample preparation, LC-MS/MS and data identification and interpretation (Dr.ª Ana Sofia CEMUP, Dr.ª Maria Turkina (LIU))

13:00 - 14:30 Free lunch

14:30 - 18:00 Sample preparation and instrumentation methods (Hands-on training) (Dr.ª Ana Sofia CEMUP, Dr.ª Maria Turkina (LIU))

Day 2, 14th December (location: ESS-IPP Porto)

8:30 - 13:00 LC-MS/MS analysis and data acquisition (Hands-on training) (Dr.ª Ana Sofia CEMUP, Dr.ª Maria Turkina (LIU))

13:00 - 14:30 Free lunch

14:30 - 18:00 Proteomics application in agriculture (fish welfare) (Dr.ª Ana Sofia CEMUP, Dr.ª Maria Turkina (LIU))

Day 3, 15th December (location: ESS-IPP Porto)

9:30 - 12:00 Statistical analysis of proteomic data (hands-on training) (Dr.ª Ana Sofia CEMUP, Dr.ª Maria Turkina (LIU))

12:00 - 14:30 Free lunch

14:30 - 18:00 Functional analysis in proteomics (Hands-on training) (Dr.ª Ana Sofia CEMUP, Dr.ª Maria Turkina (LIU))

SECONDMENTS

➤➤➤ **Maria Turkina** (LÜ → CIIMAR)

Maria visited CIIMAR in December 2023 and played a key role in organizing and executing the course "Principles of High-Throughput Proteomics Research".

Her extensive expertise and effective communication were instrumental in the success of the program. We appreciate Maria's commitment to excellence and collaboration, and we look forward to future opportunities to work together in advancing our research and educational initiatives.

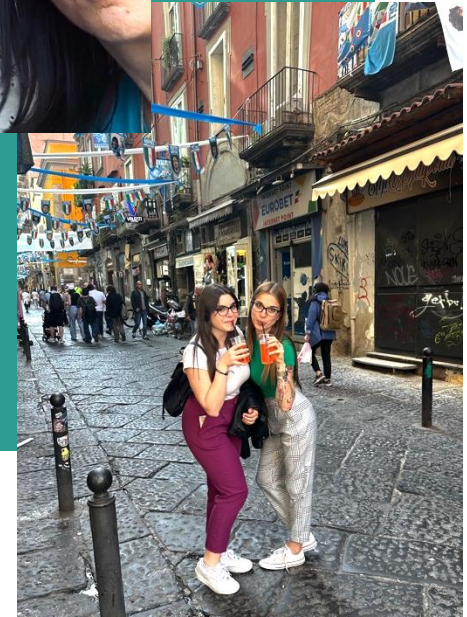


[Discover more here!](#)

➤➤➤ **Lourdes Barreiro** (IRTA → UNINA)

"My name is Lourdes Barreiro Crespo, and I am a doctoral student at IRTA La Ràpita. During the months of May, June and July 2023, I completed a short stay at Università degli Studi di Napoli Federico II (UNINA) in Naples within the BLUESHELLFISH project. My supervisors were Carmela Dell'Aversano, Luciana Tartaglione, and Michela Varra, and I worked together with Valentina Miele in the laboratory.

The aim of my stay was to evaluate different cyclodextrin (CD) polymers and compare them with C18, DIAION and florisil (commercial resins) to observe which ones worked best for two CTX-like compounds when carrying out the clean-up to *Gambierdiscus* culture samples, thus eliminating the matrix effect that they produce and obtaining better results when analyzed by high resolution mass chromatography (LC-ESI-HRMS).



"During the first month, I optimized the analysis method for gambierone and 44-methylgambierone and evaluated the repeatability and reproducibility of the instrument, along with the limits of detection (LOD) and quantification (LOQ). During this month, I also tested the different resins using two clean-up methods: suspension and solid-phase extraction (SPE) in columns using standards (gambierone and 44-methylgambierone) in solvent. During the second month, I carried out the clean-up of a spiked *G. excentricus* sample with the four resins and SPE, which was the method that showed the best results. During the third month, thirteen Gambierdiscus samples were passed through the two chosen resins in SPE and analyzed. I also analyzed the samples without the clean-up step and characterized the toxin profile of the samples.

I had a new experience, I enjoyed Italian food, and it was interesting to see how other laboratories work, learning about high resolution mass spectrometry."

Lourdes Barreiro Crespo, IRTA

➤➤➤ **Pedro Costa** (IPMA → CIFGA)

Eva Cagide welcomed Pedro Costa from IPMA and Alexandre Campos from CIIMAR at CIFGA. It was a great opportunity to discuss various Project topics and plan future exchanges. Creating connections between researchers and institutions is one of the goals of the Marie Skłodowska-Curie Actions (MSCA) program.



A RESEARCH EXPEDITION TO INHACA ISLAND: EXPLORING MARINE BIOTOXINS AND BIODIVERSITY

➤➤➤ **Cátia Bartilotti** **Catarina Churro** (IPMA → UEM) **Jorge Arteaga**

In a collaborative effort, the Blueshellfish team from IPMA joined forces with colleagues from the University Eduardo Mondlane for a five-day field campaign within the natural reserve of Inhaca Island. This dedicated research stay facilitated knowledge exchange and fostered collaboration between teams.

With the objective of studying marine Biotoxins, investigate their occurrence, distribution, and impact in the coastal ecosystem.

Also, biodiversity was assessed to characterize the sampling area. The activities included collection of water and biological samples to analyze biotoxins and biodiversity indicators. Also, taxonomic expertise was applied to species identification of marine organisms, from microscopic algae to larger marine species. The field laboratory of Marine Biology Station facilitated regular team meetings for the exchange of findings, methodologies, and insights.



>>> **Jaime Mandlate** **Eutilério Chaúque** (UEM → IPMA) **Isidro Tamele**

A scientific visit to IPMA by Professor Jaime Mandlate, Professor Eutilério Chaúque and Professor Isidro Tamele from the University Eduardo Mondlane, Maputo, Mozambique was carried out in October-November 2023. Training and knowledge exchange on the determination of marine toxins by liquid chromatography was the main focus of the visit. The several stages of toxins extraction and toxins determination by HPLC-UV for domoic acid, HPLC-FLD for PSP toxins and LC-MSMS for lipophilic toxins as well as cyclic imines were performed using selected shellfish species from Mozambique as a model.



Shellfish specimens from Maputo Bay analyzed by LC-MSMS for marine toxins presence