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EDITORIAL

The legacy of ERA-MBT

Welcome to the last and 7th newsletter from the ERA-MBT project.

November 20 and 21, ERA-MBT invited all stakeholders and project leaders to our final conference in Oslo (see report in this NL). From the feedback we got, this was a success, telling us that marine biotech has a central role in developing the blue bioeconomy and that the research and innovation roadmap we published in September 2016, is a very good guide to achieve this. We had updates from the 16 funded projects from our three calls where no major deviations from progress plans were identified. Although the thematic span of the calls was large, from biorefineries and biodiscoveries to metagenomics, it was clearly seen that biotechnology enables knowledge developments and innovations in all areas where value from marine biological resources is the goal.

... continued on page 2

The *Marine Biotechnology ERA-NET* (ERA-MBT) is a consortium of 19 national funding agencies seeking complementarities between national activities by pooling resources to undertake joint funding of transnational projects in the area of Marine Biotechnology.

During the lifetime of the project the following activities will be carried out, supporting the European Bioeconomy:

- Launching **three thematic calls** to generate joint European research and development activities.
- Arranging a number of **stakeholder events** to promote dialogue between science, industry and policy and to identify requirements for successful developments within the area.
- Performing **outreach activities** to seek complementarities and avoid overlap with other activities sharing common interest with ERA-MBT.
- Establishing a **Strategic Roadmap** with the support of the **International Advisory Group**, an expert panel reflecting views and expertise from the scientific, policy and business sectors.
- Developing a **perspective on the future** of marine biotechnology research and development and its likely impacts.
- Providing information about marine biotechnology in an **online and open access portal** with a wiki function.



Photocredit: RCN



THIRD JOINT CALL RESULTS

ERA-MBT was invited to the 2nd JPI-Oceans conference in Lisbon in October to present our achievements. As the JPIO projects were presented, which are spanning from deep sea mining, over munitions in the sea and maritime technologies, to microplastics, it was an eyeopener to experience how biotechnology and -omics technologies were mentioned and used in almost all the projects. Not as a focused endeavour, but as a tool to achieve knowledge and understanding of the environmental and health challenges these activities pose on society. This emphasised the broad impact biotechnology has in all fields working to understand interactions in biology and nature.

The same was true when attending EMBRIC's 2nd general assembly in Faro in September. This European infrastructure project made a clear case of the need for and importance of making cutting edge marine biotechnology infrastructures easily available to the European research and innovation communities as well as the SMEs and other businesses.

Although the ERA-MBT project has ended after 4 years in operation, and almost the same time in the making to raise the awareness of marine biotechnology's role, our legacy will be brought forward in an answer to the Blue Growth Horizon 2020 call for a Cofund targeting the development of the Blue Bioeconomy (see article in this NL). The legacy of ERA-MBT will be taken further on a broad horizon as a tool and value enabler. An enabling tool like biotechnology is in need for continuous developments to ensure availability of cutting edge methodology which can secure our societies' wellbeing and sustainable developments from marine bioresources.

With this, I want to give a big thank you to all my partners for a friendly and cooperative spirit during these fruitful and active years raising marine biotechnology to the position it must have in a European research and innovation system aiming at valorisation from marine bioresources. Many of us, both policy makers and stakeholders, will meet again in a larger community and direct our energies towards building the blue bioeconomy with marine biotechnology as the core enabler.



Dr Steinar Bergseth
The Research Council of Norway (RCN),
Norway

In the 3rd ERA-MBT call entitled "[Metagenomic approaches for valorization from the marine environment](#)", five projects have been selected for funding, with a total budget of € 6.27 million.

After the submission date on 7 March 2017, 16 eligible proposals were received, requesting a total of € 17.5 million. Five transnational collaborative R&D projects have been selected for funding, based on an international peer-review assessment of proposals and within the possibilities of national budgets.

The main purpose of this call was to target research towards marine metagenomes and their microbes, with a view to identifying new enzymes, metabolites, and metabolic pathways with biotechnological potential. Studying this diverse microbial resource relies heavily on multi- and interdisciplinary research teams and access to a range of tools and methodologies that are generally described as "-omics" technologies or "-omics" based approaches.

More information on the selected projects, which are expected to start early 2018, can be read in the **factsheets below**.

- [DIVE-IT](#) - Droplet In-Vitro transcription/translation Enzyme Identification
- [MarBioTech](#) - Advanced Marine Biotechnology toolbox for accessing the uncultivated marine microbial biodiversity and its novel biomolecules
- [META-MINE](#) - Mining the microbiomes from marine wood-digesting bivalves for novel lignocellulose depolymerizing enzymes
- [ProBone](#) - New tools for prospecting the marine bone-degrading microbiome for new enzymes
- [PROMiSE](#) - Protist Metabolome Screening



ABSTRACT

„Knowledge based bioeconomy" (KBBE) interlocks traditional academic topics like food research, agri- and aquaculture with new fields such as red, white, green and blue biotechnology to enhance important topics like medicine, health, nutrition as well as the merging of traditional chemical synthesis routes with biological approaches. One important part of KBBE is the integration of novel bio-derived catalysts, into biotechnological applications. To achieve this, it is crucial to have a variety of specialized biocatalysts at hand. Therefore, science is looking for new methods to identify novel enzymes to establish completely new and artificial production routes. Promising source for the discovery of new enzymes are metagenomes. Especially marine metagenomes offer an enormous potential as the ocean and seas cover not only more than 70% of the earth's surface, but also comprise an unlimited diversity of ecological niches. Unsurprisingly, Bacteria and Archaea in marine waters constitute a major fraction of global microbial biomass. Marine microorganisms have accordingly been used in the past as a source for novel enzymes, although many challenges exist when aiming at the exploration and exploitation of this biomass. To analyze the vast amount of genetic information within marine metagenomes, an efficient and powerful all-in-one function-linked screening system has yet to be found. To overcome these limitations, we want to develop a new screening platform for the fast and reliable all-in-one screening of metagenomes. We will introduce habitat guiding, as a preselection tool and develop an innovative approach that combines an in-vitro compartmentalization system with cell-free protein synthesis as function-based approach. Thus, our technology will improve the exploitation of the unique opportunities of marine microbiomes.

Topic:

- Metagenomes

Marine biomass:

- Microorganisms

Source of marine biomass:

- Microbiomes

Keywords:

Function-based metagenomics, habitat guiding, microfluidics, emulsion droplets, synthetic enzyme cascades

Total costs*: € 1.073.000

Funding granted*: € 1.032.000

Duration: 3 years (2018-2020)

** Exact amount may change after completion of national contracts*



Volker Sieber, Project Coordinator
Technical University of Munich, Germany

CONSORTIUM

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ABSTRACT

Organisms in the marine environment represent a largely unexploited source of highly valuable biomolecules. Due to the development of sequencing technologies in the last few decades, we are now able to access a vast amount of sequence information of metagenomes of cultivable and non-cultivable marine organisms. Unfortunately, our abilities to link such sequence information with function lags completely behind. The conventional system to annotate protein functions, e.g., annotation based on BLAST homology search, is very poor and often provides false predictions, in particular for classes of proteins for which biochemical characterization data has not been accumulated. Consequently, it is virtually impossible to identify novel proteins and enzymes based on sequence based screenings, only. Therefore, the goals of MarBioTech are to develop innovative tools and technologies to advance function-based searches in combination with sequence-based searches and to deliver valuable biomolecules of marine origin. Together with the innovative technology advancement, a wide range of existing marine resources including microbiomes of marine algae, jelly fish, and marine fish farms, among others, will be exploited by combining innovative function-, sequence-based and in vitro screenings for the identification of novel active high-value marine biomolecules. The target molecules will include enzymes involved in marine plastic degradation (PET esterases), fluorescent proteins for molecular medicine, novel highly active RNA polymerases as well as DNA nucleases for metagenome mining and molecular biology and quorum quenching (QQ) proteins to prevent biofilm formation.



Wolfgang Streit, Project Coordinator
University of Hamburg, Germany

CONSORTIUM

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Topic:

- Biomolecules

Marine biomass:

- Microorganisms

Source of marine biomass:

- Microbiome of:
 - Algae
 - Medusozoa
 - Fish farms

Keywords:

Metagenomics, marine biodiversity, technology advancement, novel proteins and enzyme products

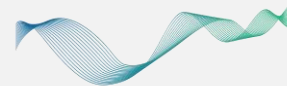
Total costs*: € 1.633.000

Funding granted*: € 1.515.000

Duration: 3 years (2018-2020)

** Exact amount may change after completion of national contracts*





Mining the microbiomes from marine wood-digesting bivalves for novel lignocellulose depolymerizing enzymes

PROJECT FACTSHEET

CALL 3 | AUGUST 2017

ABSTRACT

Lignocellulose is a greatly undervalored biomass and methodologies to convert it to high-value products needs fortification. A critical step in biorefining is the enzymatic conversion of lignocellulose to soluble sugars and lignin. The cost and the efficiency of enzymes is far from optimal and new enzymes are needed to improve the efficiency and sustainability of lignocellulose depolymerization. Through META-MINE, we will exploit the process strategies of nature's own micro-biorefinery, the shipworm. Shipworms are voracious animals with respect to their appetite for wood. Their digestive system is especially intriguing. Wood engulfed by mechanical rasping is digested by enzymes secreted by a community of symbiotic bacteria located in the gill tissue. Current model systems for the study of cellulose degradation are highly complex (e.g. community driven anaerobe systems in ruminants and the intricate secreted enzyme systems of aerobic fungi), and challenging to analyze. The shipworm gill symbionts are specialists in lignocellulose degradation and perform this task by applying a perfected enzyme cocktail in a defined and physiochemically stable environment. Thus, by unravelling the contributions of the individual enzymes in the shipworm cocktail, we have the opportunity to take a leap forward in understanding the fundamental properties of enzymatic lignocellulose degradation. META-MINE will use the shipworms as a model system for a holistic study of marine lignocellulose degradation and mine the metagenomes for novel lignocellulose depolymerizing enzymes.

Topic:

- Lignocellulose degradation

Marine biomass:

- Symbiotic bacteria in shipworms

Source of marine biomass:

- Gill tissue of shipworms

Keywords:

Shipworm, lignocellulose-depolymerization, metagenomics

Total costs*: € 1.882.000

Funding granted*: € 1.711.000

Duration: 3 years (2018-2020)

** Exact amount may change after completion of national contracts*



Bjørn Altermark, Project Coordinator
The Arctic University of Norway, Norway

CONSORTIUM

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ABSTRACT

A growing interest exists in the development of new value chains based on protein-rich deboning residues from the meat and poultry industry. Herein, enzymatic hydrolysis is an attractive refinement process to achieve new products with market potential, but its breakthrough is prevented by the lack of suitable commercial enzymes able to access the recalcitrant bone components. Driven by industrial demands, the ProBone project focuses on streamlining discovery of valuable bone hydrolytic enzymes, by selectively prospecting the unique genes and proteins of the non-cultivable marine bone-degrading microbiome. Despite its resilience, bones are degraded by free-living bacteria as well as symbiotic microorganisms associated to bone-thriving invertebrates in the marine environment. This bone-degrading microbiome is, however, largely unexplored for its biotechnological potential. ProBone aims at delivering an innovative toolbox based on omics technologies and synthetic biology methods, to expedite discovery of active bone-degrading enzymes, and to accelerate the transition from discovery to end-user applications. An international consortium with recognized scientists of complementary expertise in marine biology, microbiology, bioinformatics and biochemistry, will apply and develop a refined computational workflow for gene discovery as well as ground-breaking improvements in recombinant expression and activity assessment. These developments are key to identify tailored enzymes for the emerging bio-based economy.



Gro Elin Kjæreng Bjerga, Project Coordinator
Uni Research, Norway

Photo: Andreas R. Graven
Uni Research, Norway

CONSORTIUM

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Topic:

- Bone-degrading enzymes

Marine biomass:

- Microorganisms

Source of marine biomass:

- Biobanks and repositories that are held within institutions/companies

Keywords:

Marine microbiome, bone-degrading, meta-omics, toolbox, enzymes

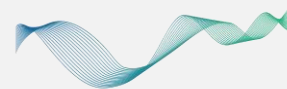
Total costs*: € 1.004.000

Funding granted*: € 940.000

Duration: 3 years (2018-2020)

** Exact amount may change after completion of national contracts*





ABSTRACT

Marine eukaryotic protists offer a huge but currently underexploited reservoir of metabolic pathways with biotechnological potential. Given their unique adaptations through symbiosis, endosymbiosis and organelle acquisition, the ecofunctionalities of protists present a hitherto untapped source to discover novel metabolic pathways and bioactivities whilst bearing a high chance of discovering different activities compared to those identified in other marine sources. The PROMiSE experimental workflow employs a comprehensive set of Omics methods. This approach spans the encoded metabolic potential to identify biosynthetic gene clusters which in turn guide the targeted metabolite profiling, merged with discovery-based metabolomics. The goal is to target identified candidate compound classes and their pathway-related metabolites and conjugations dereplicated from the Omics information. By linking these methods back to the source cell through single cell Omics methods, PROMiSE offers a unique way to recognize functional gene clusters and to understand how metabolism is partitioned across ecosystems. The vertically integrated extraction and analyses procedure within PROMiSE are supported by a comprehensive array of cutting-edge in vitro and in vivo bioassays for reliably assessing biological activities by High-Content profiling and antibacterial screening. Analytical chemistry, including high resolution mass spectroscopy and nuclear magnetic resonance spectroscopy approaches, will be used to elucidate compounds found in the bioactive fractions, which will tie back the molecular data to identify relevant enzymes, pathways, and compounds.



Tilmann Harder, Project Coordinator
Alfred Wegener Institut, Helmholtz Zentrum für Polar und Meeresforschung, Germany

CONSORTIUM

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Topic:

- Protist Metabolome Screening

Marine biomass:

- Protists

Source of marine biomass:

- Biobanks and repositories that are held within institutions/companies

Keywords:

Marine protists, metagenomics, bioprospecting

Total costs*: € 1.494.000

Funding granted*: € 1.074.000

Duration: 3 years (2018-2021)

** Exact amount may change after completion of national contracts*



MARINE BIOTECHNOLOGY STRATEGIC RESEARCH AND INNOVATION ROADMAP

The launch of the ERA-MBT roadmap October 2016 coincided with other marine biotechnology related policy statements made around the same time. The OECD in its [Science, Technology and Innovation Policy Paper No. 43](#) , and the [EU Food 2030 Conference](#) provided two perspectives on the future role of marine biotechnology in supporting the **growth of the bioeconomy**. The convergence of views expressed by both initiatives coincided with the core themes of the ERA-MBT Marine Biotechnology Research and Innovation Roadmap.

The publication of the ERA-MBT research and innovation roadmap attracted significant interests at national and international levels. The European Marine Board together with ERA-MBT published [a policy brief](#) promoting the roadmap, which recognised the role of marine biotechnology in **adding value to marine biomass and advancing innovation in Europe's bioeconomy** . Elements of the roadmap were taken up in the call from the H2020 programme for [a CoFund initiative](#) to support the production, harvest and exploitation of marine biomass (including underutilised materials from harvesting and processing). And the Marine Biotechnology ERA-NET was amongst the many projects reviewed in the context of new policy regarding sustainable Oceans and the Blue Economy .

Since publishing the roadmap the ERA-MBT project continued to engage in activities to disseminate it. Feedback from an [industry workshop in June 2017](#), and the final project conference in December 2017, **highlighted the benefits and validity of having a clear roadmap for marine biotechnology**. Participants at each event also supported the strategic approach adopted by the ERA-MBT project in defining thematic research, and confirmed the roadmap's focus on translating marine biotechnology research outputs into new products and processes.

The ERA-MBT roadmap established a foundation for European marine biotechnology research and innovation. It is expected that others will be able to build on the roadmap, providing supports that enable the challenges in adding value to marine biomass to be met. It is also hoped that in time the roadmap will be revised, and in doing so, continue to inform and guide policy, funding agencies, industry and the research community about the opportunities offered by our ocean resources.

More information on [the ERA-MBT website](#)

FROM KNOWLEDGE OUTPUT TO VALUE CREATION

An important task for ERA-MBT has been **to improve the interactions between academia and industry**, and as part of this work, focus has been on releasing the potential of marine resources and bring more products to market. Among the challenges are technology transfer mechanisms, IPR issues, public and private financial issues, options for public private partnerships, etc. A critical aspect having been identified is the communication between partners involved in the value chain from knowledge output at universities and research institutions to the processing environment and marketing of products. There are many different partners involved, each with their own 'language' and understanding of what is needed for successful transfer of knowledge to market value. **Tangible guidelines** on how **optimal communication** could be achieved is thus requested.

In order to investigate what the most important factors would be for developing a communication tool for successful commercialising knowledge output, ERA-MBT joined forces with the [EU supported project COLUMBUS](#) working on '**knowledge transfer for blue growth**', managed by AquaTT, Ireland. [A one-day workshop](#) was arranged in Brussels 1 June 2017, where 16 experts experienced in marine biotechnology value chain were invited, representing academia, funding agencies, venture capital, technology transfer offices, legal expertise, and small and large enterprises.



*Participants at the workshop in Brussels, 1 June 2017.
Photocredit: Torger Børresen*



Prior to the workshop a survey had been sent to the participants, in which they were asked to identify five critical aspects of communication/information flow in the value chain, suggest actions to improve the present situation, and if possible, give examples of good practice. The answers were analysed, grouped into categories, and statements were extracted for discussion at the workshop. Cases were also presented, and the participants were asked to prioritize the most important communication elements in the value chain, and identify typical bottlenecks and risks.

The output from the workshop was grouped into statements of 'lessons learned' and 'proposed actions' for the different steps in the value chain, starting with the identification of the knowledge output, which would form the basis for setting the team and projecting timelines for the further stages, being 'proof of principle', 'proof of concept', 'pre-commercial trials', before reaching the final stages of processing the commercialised products.

The requirements identified were organised in a set of guidelines consisting of six specific steps according to the stages described above. The provided guidelines will have to be fine-tuned to fit the various conditions encountered in a given value chain, and a checklist must be worked out for all partners involved in the team to be aware of how communication should be performed and how achievements should be documented. It is anticipated that the tool developed would be useful for market driven, as well as curiosity driven research. Although adapted to the marine biotechnology value chain, it might also be applicable in other areas.

ERA-MBT FINAL CONFERENCE 'OCEANS OF OPPORTUNITIES'

What? After 4 years of collaboration, the Marine Biotechnology ERA-NET consortium of 19 partners from 14 countries has presented the achievements of ERA-MBT and initiatives taking these further. The conference was interactive and took feedback from the participants into future activities.

When? 20th – 21st November 2017

Where? The Research Council Norway, Oslo

Outcome? The ERA-MBT final conference brought together 80 delegates from industry, academic institutions, policy bodies and funding agencies. Just like the other ERA-MBT stakeholder events, the conference provided a forum for networking that fostered productive discussions and generated insights into scientific, economic and societal impacts of marine biotechnology.:

More information:

- [Programme and participants list](#)
- [Abstracts funded projects](#)
- [Presentations](#)
- [Photo gallery](#)
- [News article](#)



Participants at the ERA-MBT Final Conference, Oslo
Photo credit: ERA-MBT



COFUND BLUE BIOECONOMY: UNLOCKING THE POTENTIAL OF AQUATIC BIORESOURCES

ERA-MBT has in cooperation with the recently ended ERA-net on aquaculture (COFASP) and JPI-Oceans worked with the EU-COM to take up the legacy from the two ERA-NETs with a strong link to the activities in JPIO. The objective is to valorise aquatic bioresources to create jobs, provide food, feed and bio-based products, and pave the way for a sustainable and competitive European blue bioeconomy. These efforts have resulted in a call for a Cofund ERA-NET in the workprogramme 2018 – 2020 (BG-02-2018).

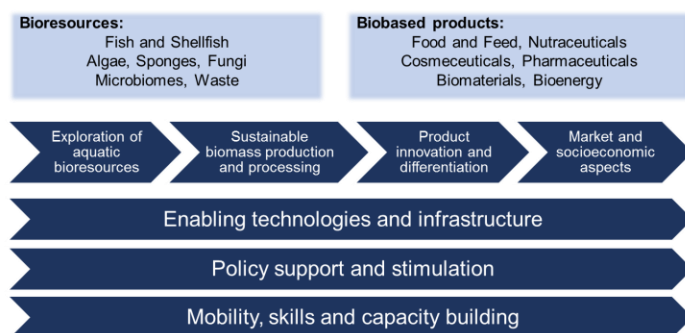
More than 20 partners from 16 European countries including new member states and associated countries have provided indicative commitment of more than €20 million with the ambition to launch additional calls. A contribution of €8 million from EC is envisaged and interest expressed by international partners will be followed up.

This Cofund engages relevant funding agencies in the aquatic field to implement a co-funded call focusing on **Blue Knowledge and technological developments to respond to needs and gaps for R&I**. The Cofund will create critical mass along the value chains from biomass to products and markets. It will apply the ‘3R principle’ of Reducing, Reusing and Recycling to achieve a circular economy. Innovative, sustainable and climate-friendly utilisation of aquatic biomass at different trophic levels will be explored, as well as sustainable harvesting, and novel aquaculture production systems targeting a range of markets. **Biotechnology** makes it possible to target new genetic resources and biomolecules, and utilise close to 100 % of the available biomass in new biorefineries.

The ERA-NET Cofund **will address gaps** such as: developing innovative uses of underutilised and waste material from fisheries and aquaculture to achieve zero waste; using biotechnology and ICT to develop smart, efficient, traceable food systems and create synergies between aquaculture and fisheries (genetic assessment);

unlock the potential of microbiomes in aquaculture, fisheries, food processing and biotechnology; apply the latest developments in ICT to the Blue Bioeconomy; creating predictive tools to improve the identification and targeting of biodiversity “hot-spots” in the oceans (omics based technologies); explore synergies with land-based production in areas such as food and feed processing, biorefining, bioenergy, biomaterials, chemicals and nutrients and include waste streams from aquatic to terrestrial value chains; improving aquaculture and fisheries by using biotechnology to create innovative feeds, improve brood stock, introduce new species, define stock baselines, and assess stocks.

R&I areas along the value chains – From biomass to products and markets



The Cofund will **create new knowledge driven industries and jobs** in rural and coastal areas and ensure sustainable Blue Growth for future generations. It will provide consumers with the knowledge needed to make informed decisions about safe, healthy and sustainable food and policy makers with robust scientific advice. Involvement of the users from the outset will **secure the market and social relevance** and update of outcomes. The Cofund will undertake additional activities and calls to **strengthen impact** through capacity building and mobility, networking, foresight/case and pilot studies, and use of European and national infrastructures thereby enhancing the leveraging effect of the EU investments in the partnership.

Contact: stb@rcn.no



ERA-MBT IN INTERNATIONAL EVENTS

PLATFORM ANNUAL EVENT 2017 - ERA-MBT INTERNATIONALIZATION EFFORTS

The last Annual Event of PLATFORM "P2P Networks for Impact, Co-creation and Internationalization" took place in Rome, Italy, 5-6 October, 2017, bringing together 52 participants to discuss the topics of alignment, internationalisation & co-creation and responsible research.

The session on Internationalization has addressed the common issues that arise when establishing collaboration with partners beyond Europe. Experiences from speakers beyond Europe and speakers from several P2Ps that work towards achieving this global dimension were shared.

Marta Norton (FCT, PT) presented the ERA-MBT internationalization efforts, which started already in the previous FP7 CSA with the comprehensive MBT international inventory, and have succeeded in the FP7 ERA-NET through several new contacts established with funding organizations in the East and West Coast of Canada. These connections resulted in a joint funding effort with Fonds de Recherche du Québec and with Genome BC in the ERA-MBT 3rd Call, where two projects with Canadian participation were selected for funding: Genome BC will fund two Canadian teams, from Simon Fraser University and University of British Columbia, which will be working in the next three years with several European teams in the projects, DIVE-IT and MARBIOTECH, respectively (see: www.marinebiotech.eu).

The future Blue Bioeconomy Public-Public Partnership will provide an ensuing framework to maintain and establish new international contacts. Countries such as Argentina, Brazil, USA, Canada, Indonesia, New Zealand and South Africa have already expressed their interest to participate in this initiative.



Participants at the Platform annual event

THE 9TH RENDEZ-VOUS DE CONCARNEAU ON MARINE BIOTECHNOLOGY

This year's conference in Concarneau, Brittany, 'where industry meets science' was successfully held 25-26 September 2017. The general theme was 'Biomaterials', but the conference was initiated with a session on 'International Cooperation'. The keynote address was given by prof. Juan Correa, The Marine Station, Las Cruces, Santiago, Chile. He gave an overview of the research at this marine station, and he emphasised his international collaboration, particularly with European researchers and marine stations in France. This presentation was followed by Torger Børresen, ERA-MBT, who presented 'Efforts to established continued ERA collaboration on Blue Bioeconomy'. He gave an update on the most recent developments and plans for establishing an ERA Cofund consortium to apply for a project on the expected call BG-02-2018 Blue Bioeconomy Public-Public Partnership



Torger Børresen presenting at the 9th Rendez-vous de Concarneau



ERA-MBT AT A GLANCE



Project Coordinator

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ERA-MBT Partners

The ERA-MBT partners welcome you to ERA-MBT and invite you to become involved in the shaping of a common ERA in Marine Biotechnology. Contact the individual project partners using the partner information page at the [project website](#).

Stay connected

[Subscribe](#) to the newsletter mailing list

Follow us on Twitter [@ERA_MBT](#)

Contribute to

[The MarineBiotech wiki-pages](#) which aggregate information on marine biotechnology to inform funding agencies, stakeholders and the interested public about developments, achievements and knowledge in this area.

[A LinkedIn communication forum](#) to support exchanges between stakeholders and to highlight opportunities for interlinkage and collaboration.

Comments? Suggestions?

Please contact us at info@marinebiotech.eu.

Upcoming events

We are collecting information on all events related to the field of marine biotechnology.

To stay up to date, please visit our [upcoming events page](#). If you cannot find the event you are organising or attending and would like to have it featured in our events calendar, please contact [us](#).



Newsletter acknowledgements

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