

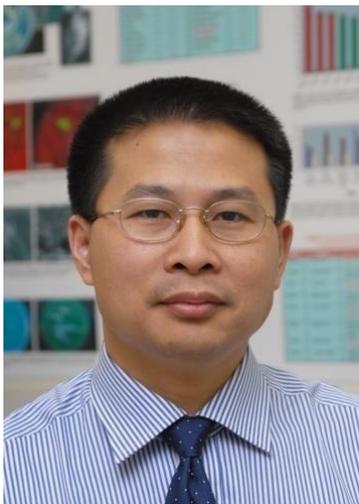


Prof. Wei Zhang – Australia, an ocean of blue opportunities

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Australia is becoming an important player in the blue economy due to its mega-biodiversity, unique marine bio-resources and technological advances. Australia is now searching for external alliances to drive future business innovation and industry growth. For this, **a recent partnership was established between BioMarine and the Australia New Zealand Marine Biotechnology Society**, headed by **Prof. Wei Zhang** (Director of the Centre for Marine Bioproducts Development at Flinders University), **who brings us all about their achievements and collaboration opportunities especially available for partnering with the BioMarine Community.**

Bringing mega-biodiversity and unique marine resources into the global industry



Prof. Wei Zhang aims to boost the translation of Australia's marine biotechnology research to the industry through international partnerships.

Flinders University has a long history of marine biological sciences and marine biotechnologies R&D with great focus on aquaculture biotechnology innovation. However, during the last 10-15 years the scope has been widening to other areas such as human nutrition, biofuel, bioenergy and agriculture. Prof. Zhang, a biochemical engineer from China, came to Australia in 1997 and brought to Flinders University a more applied science and engineering approach where the technology innovation can be a driver for industry and economic growth. Very few moments into conversation with Prof. Zhang and we quickly understood the immense potential that resides in Australia – **“We live in of the richest countries in terms of marine biodiversity in the world. However, there is still a lot to be done when it comes to translate these unique biological resources (and scientific discoveries) into applied technology innovations that can actually drive the future industry growth”**.

With this vision in mind, Prof. Zhang launched the Centre for Marine Bioproducts Development 10 years ago with one key agenda: **“Australia has been doing a great job in the marine biological discoveries, particularly in the marine product discovery for drug development. However, it hasn't done very well in terms of translating this research to the industry and economic growth. So, our goal at the time was to set out a research platform and develop translational capacity to grow and sustain the future of marine biotechnology industry in Australia for a global market”**.



Prof. Zhang and its team at the Centre for Marine Bioproducts Development (Flinders University, Australia), a cross faculty Centre for innovation, education and commercialization in Marine Bioproducts.

The main drivers pushing Australia forward in the blue economy

Australia is becoming an important player in the marine biotech sector and we asked Prof. Zhang what the main drivers were—**“In my opinion, there are three main drivers. The first, and most important, is the economic and industry drivers. Despite its constant economic growth for over 35 years, Australia faces great external competition and that is pushing for the development new industry growth area, and marine biotechnological advances to stay competitive. The marine bio product industry is becoming a huge global trend and even though we have unique and mega-diverse resources, there is still a lot of space to activate these resources and practices to the industry level, which is a huge opportunity for Australia! The second driver resides in the demand for more sustainable products, especially in the agriculture sector which counts for over 10% of national GDP”**. Finally, Prof. Zhang concludes that **“the last driver is related to the need to be export oriented for Australian industry. Australia is a small country in terms of population so there is limited upscaling ability. Moreover, we have a low investment capacity to drive the technology innovation into new industry developments. This means that it is imperative to establish international alliances that are more industrially developed, where we can provide our unique resources and technological advances and acquire international industry knowledge and investment”**.

Pointing out major achievements, trends and gaps

One of the most palpable achievements of Prof. Zhang’s group was the creation of the **Australia New Zealand Marine Biotechnology Society**, initiated between 2011-12. It started out as a network to understand who is working in the marine biotech sector and what they’re doing and, finally, to bring them together for collaborations. Each one and a half year, the Society organizes a Convention to work on different marine related topics, from biodiversity conservation, to ecosystem services and biotechnology innovations.

Prof. Zhang summarized a few of the main trends he noted since the first edition in 2015 – **“In Australia, the world’s biggest island, around 50% to 90% of the marine biodiversity are endemic species. This means that Australia is in a unique position to give a great contribution to the world, and this is reflected on the three main trends we have been witnessing. The first is related to the need for all biotech projects to include an impact assessment on the used marine resources and how they can be sustainably managed and utilized. The second, and because Australia’s market motivation is not very high, the focus have been given to niche markets that allow for exporting market, such as nutrition (human and animal) and health. Third, and being the country so evolved in terms of agriculture, the development of products to promote crop growth and to fight pests and other menaces have also been growing considerably due to local demand”**. After considerable efforts and achievements, Prof. Zhang shared that - **“Despite our unique resources and great advances in sustainable management of marine resources and biodiscovery research, we still miss the ability to translate this knowledge into the industry. And for that, we need to focus in establishing international collaborations to involve the industrials, investors and governments to promote future business innovation”**.



Despite its great advances in sustainable management of marine resources and biotechnology research, Australia is still missing the ability to translate this knowledge into the industry.

Open opportunities for international cooperation



The MBB-CRC aims to support the collaboration between the industry and academia for market-driven research and international cooperation.

To bridge the identified gap between research and industry development and establish Australia's presence as a global actor in the blue economy, Prof. Zhang defends that local alliance and international cooperation are of absolute importance right now and the future - **"We are now developing the first Australian Marine bio-products & Biotechnology Cooperative Research Centre (MBB-CRC) dedicated to the collaborative development of valuable and sustainable produced marine-based bio-products, with matching co-investment from both industry partners and the Australian government"**. Prof. Zhang explains the main goals - **"This programme aims to promote an industry/market driven research through the collaboration between the industry and academia to define a R&D agenda to**

serve the Australian industry and increase the economic interest". Moreover, the opportunities created account for a long-term co-investment, as Prof. Zhang explains - **"The funds request is in the order of AUS\$200m to AUS\$300m for 10 years to develop long-term commercialization projects (prototypes, proof-of-concept and scale up), and they can be renewed for another 10 years after it ends!"**. Also, this funding supports international cooperation, meaning that it is a huge opportunity for international entities to collaborate and invest in Australia, sharing industry knowledge and opportunities and receiving access to unique and available marine bioresources and the latest biotechnological advances. It is the perfect win-win situation!

Partnership advantages for the BioMarine Community

To boost the establishment of these needed international opportunities, the Australia New Zealand Marine Biotechnology Society established an official alliance with the BioMarine Organization to boost collaboration between Australia and New Zealand and the rest of the world. Prof. Zhang shared with us why this is so important - **"We have accompanied the impact of BioMarine, especially in Europe, for the last 10 years and we recognize it as one of the largest and global networks in the blue economy, holding an important collaboration platform of over 6000 members from many different backgrounds around the world. From this perspective, this holds a huge opportunity for Australia and New Zealand, which have been working rather isolated"**. Regarding the main expectations for this partnership, Prof. Zhang shared that **"This will allow us to share privileged business and industry collaborations opportunities with the BioMarine Community Members and open the doors for Asian-Pacific markets. On the other hand, this will allow us to acquire the needed industrial knowledge and marketing expertise to define the best position in the global marine resources supply chain"**. In a closer horizon, Prof. Zhang aims to leverage the support of the MBB-CRC - **"We aim to bring in the next 6 months, key industry players from Europe to collaborate and initiate the EU-Australia and New Zealand partnership in their plans!"**.

What the Australian delegation is bringing to the BioMarine Convention 2019

Prof. Zhang's team will attend the 2019 BioMarine Convention and they have a very well-defined message to convey - **"Australia has an ocean of partnership opportunities for the global industry! We want the Community to see Australia as a critical partner for the development of the global blue bio economy. Our vast and unique marine bio-resources and world-class research capacity are a value added for international players to boost their global business opportunities"**. Regarding what they aim to bring back to Australia, Prof. Zhang says that **"We want to better understand: the biotech potential that exists in Portugal, Europe and other participating countries; the potential interest of external investors; and identify the main global market demand opportunities!"**. And we look forward to meeting you in Cascais, Portugal from 4-5 November!

For more info, connect with Prof. Zhang and his Team through the **BioMarine Community!**