



中央研究院生物多樣性研究中心

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**An Emerging Photosymbiotic Marine Model Animal:
The Acoele *Symsagittifera roscoffensis* and
Its Green Microalgae Photosymbiont**



Dr. Xavier Bailly

**Research Scientist
Marine Institute of Roscoff in Brittany, France**

Time: 2024. 05. 16 Thu. 15:00

Venue: Auditorium, 1st Floor,

Interdisciplinary Research Building

跨領域科技研究大樓1樓演講廳

Host: Dr. Sen-Lin Tang 湯森林研究員



Short CV

Xavier Bailly is currently a research scientist at the Marine Institute of Roscoff in Brittany, France, managing a team that explores life cycles in captivity and conducts functional explorations.

In 2002, he obtained a PhD specializing in molecular genetics and evolution, focusing on an annelid species found at -2500 meters near the East Pacific Rise deep-sea hydrothermal vents. He specifically studied the giant tube worm known as *Riftia pachyptila*, describing from an evolutionary perspective the maintenance (in sulfidic environments) or loss (in oxidized ones) of the hydrogen sulfide binding capacity of circulating hemoglobins, in addition to the conserved oxygen binding.

During his post-doctoral work, as functional exploration on these uncultivable organisms in the lab was not feasible, he gradually completed the life cycle of a photosymbiotic marine animal model, *Symsagittifera roscoffensis*, commonly known as the « Roscoff worm », a green unicellular algae /animal association. The goals and hopes were to use it as a proxy for exploring marine photosymbioses, such as those in corals or clams, among others.

Together with collaborators, he explored various facets of this photosymbiotic flatworm (from the acoel family), including the evolution of the nervous system influenced by neuroglobins and the capacities for brain regeneration. He is also interested in the photobiology of this photosymbiotic species and, more broadly, in the *modus vivendi* that leads to the sustainable association between a photosynthetic eukaryote (unicellular algae) and a metazoan.

Xavier will provide an overview of various projects and directions, both completed and ongoing, that stem from studying the life cycle of the *Symsagittifera roscoffensis* species in captivity, including outreaches for education and the Art/Science interface.