

# L'Animation Scientifique



> JEUDI 04 NOVEMBRE 2021, 13h45 \ 14h30

## Mechanistic approaches to investigate contaminant toxicity and cellular stress responses in phytoplankton

One of the current challenges in environmental toxicology is related to the broad range of sensitivity that different species of the same group might have toward one or multiple contaminants. Such variation in sensitivity is mainly associated to the ability and strategies that different organisms might have to respond and acclimate to the stressors. In the last years, phytoplankton environmental toxicology investigations focused mainly on adverse effects induced by contaminants, while mechanisms activated to respond and maintain cellular homeostasis are still poorly understood.

The proposed seminar will focus on few case studies from my doctoral and postdoctoral work highlighting the role of cellular stress responses in contaminant impact on model phytoplankton species. Firstly, examples will be given on the role of cellular stress responses in the combined exposure of phytoplankton to contaminants and environmental factors (light irradiation with variable spectral compositions). Secondly, it will be shown how long-term exposure to sub-lethal concentrations of contaminants can induce plastic stress responses that influence cellular morphology and lifestyle in phytoplankton. Finally, the ability of phytoplankton to operate biotransformation of organic contaminants will be addressed. Microorganisms are known to use multiple strategies to detoxify their intracellular and extracellular environment upon contaminant exposure. Their metabolic capacity to transform complex and hazardous compounds in less toxic, less persistent and less bioavailable structures is expected to play a determinant role in contaminant fate and have great potential to restore polluted ecosystems. However, little is known about biotransformation processes in phytoplankton. During the seminar, I will introduce the objectives of the PHYCOCYP project and its relevance in the investigation of phytoplankton mediated biotransformation processes.

par **Giulia Cheloni** Post-doctorante CNRS, UMR MARBEC Sète

**Séminaire accessible sur ZOOM :**

<https://umontpellier-fr.zoom.us/j/94437658185>  
ID de réunion : 944 3765 8185

UMR MARBEC (IRD, Ifremer, Université de Montpellier, CNRS, INRAE) © 04 67 14 36 72 - 04 67 13 04 24 \ [www.umarbec.fr](http://www.umarbec.fr)

**+ programme & archives**

Programme des Jeudis et archives  
des présentations disponibles sur :  
[www.umarbec.fr](http://www.umarbec.fr)

**@ contacts**

myriam.callier@ifremer.fr  
sylvie.lapegue@ifremer.fr  
laura.megevand@umontpellier.fr  
celine.reisser@ifremer.fr

**> prochainement**

**Jeudi 18 novembre 2021 : Alexandra Weber  
(Ifremer, Brest)  
"Giant genomes uncover ecological  
speciation in the deep ocean"**