

# Post-Doc position on marine plankton communities metabolic modelling

Marine plankton encompass highly diverse species assemblages across various environmental conditions, and is pivotal to key ecosystem services, ranging from biological carbon pump, marine food web or impact on major biogeochemical cycles.

Throughout more than 15 years of expeditions, the *Tara* Ocean Consortium gathered a unique collection of samples covering a wide diversity of marine environments to describe composition and biological activities of marine plankton communities, and already contributed to significant breakthroughs in understanding this set of living organisms (cf. Tara Ocean Foundation *et al.* 2023. *Nature Microbiology* [<https://doi.org/10.1038/s41564-022-01145-5>] for recent a review and prospective).

What are the biological functions that shape the building of plankton communities? What are the metabolic interactions within a given community? What is the metabolic impact of viral infection? Can we decipher the impact of environmental parameters (e.g. nutrients availability) on biological functions, and vice versa? These are some of the research questions that are addressed in our group.

In this context, we propose a 2 years post-doc position at CEA/Genoscope, near Paris (France), to model metabolic interactions within marine plankton communities (from viruses to unicellular eukaryotes) sampled in the context of the *Tara* Oceans campaigns, and their intertwining with environment.

This project will take advantage of a new top-down metabolic modelling system for unicellular phototroph eukaryotes (PhotoEukStein, Burel *et al.* 2023. *BiorXiv*) combined with existing methods and resources for prokaryotes, and metabolic niche modelling techniques (Régimbeau *et al.* 2022. *Ecology Letters* ; Régimbeau *et al.* 2023. *BiorXiv*).

Research will take place within the Ocean SYstems biology and GENomics (OCSYGEN) group of the Metabolic Genomics research unit at Genoscope (CEA - CNRS - Université Paris Saclay) in Evry, France.

Salary ranges from 31 to 33k€ net per year, including health coverage.

Position is to start end 2024

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