

## **Seasonal fluctuations in plankton genetic diversity and their implications for responses of planktonic communities to global warming**

### **MSc. thesis at the Flanders Marine Institute (VLIZ)**

Plankton communities – i.e. assemblages of various species of bacteria, algae, crustaceans, larvae, etc. – form the basis of the marine food web. These communities are not static but dynamic and change across space and time; and so do the ecosystem services of plankton, which include primary production, nutrient cycling or biological control. Plankton communities strongly respond to photoperiod and temperature, leading to seasonal fluctuations in geographic distribution of species that have been studied in detail. However, at the intraspecific level, there are indications that different genotypes may have different thermal and photoperiodic preferences. As such, the distribution of genotypes would be expected to vary across seasons with for example warm-adapted genotypes occurring further north in summer. Identifying and quantifying seasonal fluctuations in genotypes is a crucial step towards predicting the resilience of plankton communities to global warming. The work will include molecular genetics, microscopy, bio-informatics and statistical analyses. The relative importance of these techniques can be adjusted according to the student's preferences. Candidate should have basic bio-informatics skills. Safety: SOPs will be followed for work in the molecular laboratory.

Contact person for this research line: Pascal Hablützel ([pascal.hablutzel@vliz.be](mailto:pascal.hablutzel@vliz.be))