

## Ondřej Prášil`s group

**Title of the project:** Copper sensitivity in *Ostreococcus taurii*

**Supervisor:** Meri Eichner      [eichner@alga.cz](mailto:eichner@alga.cz)

**For how many student/s:** 1-2

### **Description of the project:**

Copper is an essential nutrient for all phytoplankton since it is required in many biochemical pathways, including photosynthesis and nitrogen assimilation. However, when present at high concentrations, copper can also have toxic effects. In a previous experiment on *Ostreococcus taurii*, the smallest free-living marine phytoplankton species, we discovered that copper was toxic already at surprisingly low concentrations.

In this project, we will investigate the physiological mechanisms behind this copper toxicity. We will grow *Ostreococcus* cultures under different conditions that might promote toxicity, such as high light intensities and low gas exchange. In these cultures, we will determine the effects of copper on growth rates and chlorophyll content and explore several physiological parameters that might be related to copper toxicity, including photosynthetic activity and indicators of oxidative stress.

Students will learn how to grow phytoplankton cultures, determine growth rates and oxygen concentrations and characterize photosynthetic activity (e.g. by Fast Repetition Rate Fluorometry).

### **Requirements:**

Ability to speak and write in English