



## **Discover the secrets of the sea with an oceanographer**

Yuri Galletti, Chiara Santinelli, Margherita Gonnelli, and Stefano Vestri  
CNR, Biophysics Institute, Pisa, Italy (yurigalletti@gmail.com)

The Paris Agreement on climate changes came into force on November 4<sup>th</sup>, 2016. Nevertheless, the commitments made by governments are probably not so ambitious, and the emissions of greenhouse gases will be probably higher than would be necessary to maintain the average global temperature increase below 2 degrees. A common effort among politician and people is therefore needed to reduce CO<sub>2</sub> emissions. In order to adapt and react to climate change, our society must change radically within a few years. It is necessary to prepare the new generations to live according to a more sustainable lifestyle. United Nation developed the strategy for Education for Sustainable Development, which unfortunately is not present in the scholastic programs.

We believe that public outreach is one of our duty toward the society, we therefore carry out different communication actions. Our target are children and teenagers, because young people have the power to change the world. We organize lectures and outreach activities for primary and high schools as well as scientific campus, where students learn about the functioning of the marine ecosystem and the importance of the oceans in the everyday life, from the source of food to its recreational use, from climate control to the source of energy. The impact of human activity and its effects on environment are disseminated through scientific data, images and videos.

We presented a laboratory for children (8 to 13 years) at the Science Festival of Genova in 2014. Through a game we introduce the functioning of marine ecosystem and explain the work of the oceanographers. Starting from the ideas of the children and with some photos of phytoplankton, zooplankton, bacteria and fishes, we construct the marine ecosystems and the goods and services that the sea can offers. A black spot on the drawing represents the anthropic impact to the ocean. This makes possible to explain to the public (children and sometimes adults) the work of an oceanographer and that everyone can contribute to make our lives better and to decrease our impacts on climate, because we do not have a "Planet b". A similar activity is also presented every year at the European Researchers' Night in Pisa. For the future we plan to create an interactive virtual Anthropocene museum. A journey to discover the new geological epoch, with the scope of encouraging people to reduce their ecological footprint.