

# France-Singapore Science and Innovation Lecture Series

Jointly presented by Department of Biological Sciences NUS, the Embassy of France in Singapore, the Collège de France and the National Research Foundation Singapore and in partnership with Université Paris Sciences et Lettres (PSL). This lecture series is part of the activities of the France-Singapore Joint Committee on Science and Innovation



## Tara Oceans: Eco-Systems Biology at Planetary Scale

Friday, 1 July 2022 | 4pm | LT 20 at NUS

### Chris Bowler

Ecology and Evolutionary Biology Section, Institut de Biologie de l'École normale supérieure (IBENS), Paris, FRANCE

#### About the speaker

Chris Bowler is Director of Research at the CNRS and Director of the Plant and Algae Genomics Laboratory at the Institute of Biology of the École normale supérieure in Paris. He obtained his PhD at the University of Ghent in Belgium, followed by postdoctoral studies at the Rockefeller University in New York. In 1994, he established his own laboratory working on signalling in higher plants and marine diatoms at the Stazione Zoologica in Naples, Italy, and in 2002 he took up his current position in Paris. He has been a member of EMBO since 1995, was awarded the CNRS Silver Medal in 2010, ERC Advanced Awards in 2012 and 2018 and the Institut de France Louis D Foundation Award in 2015. In 2018 he was elected member of the French Academy of Agriculture. His main research interest is the understanding of the response of plants and marine diatoms to environmental signals, through functional and comparative genomics. He is one of the scientific coordinators of the Tara Oceans project to explore the biodiversity, ecology and evolution of plankton in the world's oceans.

The ocean is the largest ecosystem on Earth and yet we know very little about it. This is particularly true for the plankton that drift within, even though they form the base of marine food webs and are key players in Earth's biogeochemical cycles. Ocean plankton are at least as important for the Earth system as the forests on land, but most of them are invisible to the naked eye and thus are largely uncharacterized. To increase our understanding of this underexplored world, a multidisciplinary consortium, Tara Oceans, was formed around the 36m research schooner Tara, which sampled plankton at more than 210 sites and multiple depth layers in all the major oceanic regions during expeditions from 2009-2013 (Karsenti *et al.* Plos Biol., 2011). This talk will summarize the foundational resources from the project, which collectively represent the largest DNA sequencing effort for the oceans (see Science special issue May 22, 2015 and Cell, Nov 14, 2019), and analyses that illustrate several aspects of the Tara Oceans' eco-systems biology approach to address microbial contributions to ecological and evolutionary processes. The project provides unique resources for several scientific disciplines that are foundational for mapping ocean biodiversity of a wide range of organisms that are rarely studied together, exploring their interactions, and integrating biology into our physico-chemical understanding of the ocean, as well as for identifying new organisms and genes of biotechnological interest. These resources, and the scientific innovations emerging to understand them, are furthermore critical towards developing baseline ecological context and predictive power needed to track the impact of climate change on the ocean.



Department of Biological Sciences  
Faculty of Science



COLLÈGE  
DE FRANCE  
— 1530 —

NATIONAL RESEARCH FOUNDATION  
PRIME MINISTER'S OFFICE  
SINGAPORE



[Registration is required](#)

Scan QR code to register

