

Thursday 5th November 2020, 19-20h

Unravelling the cancer puzzle from an ecological and evolutionary perspective – an Australian and French International Associated Laboratory

Professor Frédéric Thomas (CNRS), France
Associate Professor Beata Ujvari, Deakin University

Cancer is not only a major cause of mortality worldwide that touches nearly every family, but also a disease which affects all other multicellular organisms. Oncology as a scientific field has, until now, developed in relative isolation from ecological and evolutionary sciences. To overcome these caveats, the presenters established the “Cancer in Ecology and Evolution International Associated Laboratory (LIA)” in order to understand the ecological and evolutionary consequences of cancer in ecosystems.

This talk will focus on how applying evolutionary principles to cancer revolutionises treatment strategies and approaches. The talk will explain how - in contrast to classical treatment strategies that aim to eliminate all cancer cells (a near impossible task) - adaptive therapy aims to control the enemy. The presenters will then demonstrate what happens when cancer cells become the ultimate foe: when they escape the organism, become contagious, and drive species to extinction, like the iconic Tasmanian Devils. Finally, they will demonstrate how linking interdisciplinary disciplines has the potential to reveal new perspectives and strategies in human cancer research and in wildlife biology.

This collaboration is supported by the CNRS, the University of Montpellier, the French Embassy, the Australian French Research Association (AFRAN), Deakin University and the University of Tasmania.



Frédéric Thomas is the Directeur de Recherche (senior scientist,) at CNRS. He has a well-established expertise in the field of host–parasite interactions, especially host manipulation. He has published more than 240 articles in numerous international peer-reviewed journals, including *Nature*, *Nature Ecology and Evolution*, and *Nature communications*. He has also edited 12 books and written two. He has been working on projects related to evolution and cancer since July 2011 and has since published 70 articles on this topic.



Beata Ujvari is an Associate Professor in Bioinformatics and Genetics at Deakin University. As an evolutionary ecologist, her research focuses on the interactions between organisms and their environment and these effects on organismal fitness. She has authored more than 130 journal articles and 5 book chapters on evolution, animal behaviour, genetics and ecology as they relate to cancer. Dr Ujvari edited the first textbook on the topic of *Ecology and Evolution of Cancer*, published by Academic Press. She is the Victorian hub leader of the Australian French Research Association (AFRAN).

Free event, but please register [here](#) for the link.