



**Marie SEMON**

From France to Finland



Project: **Pleiotropy**

Research topic: **Biology**

Finnish Institution: **Institute of Biotechnology, University of Helsinki**

French Institution: **Ecole Normale Supérieure de Lyon**

Dates of mobility: **06/12/2022 to 09/12/2022**

Program: **Maupertuis Programme**



## PRESENTATION

[Marie Semon](#) started research in molecular evolution, when several animal genomes had just been made available, enabling the investigation of entangled relationships between gene expression, gene order, and mechanical properties of the genome. Her ambition was to bring molecular evolution (in particular, of non-functional phenomena) to the study of well-described biological systems. In 2016, she established an independent team with [Dr Sophie Pantalacci](#), a developmentalist, at the [Laboratoire de Biologie et Modélisation de la Cellule](#) (ENS de Lyon). They have demonstrated that serial organs develop through the same genes, and have highlighted the importance of heterochronies and cell composition, the importance of which is now acknowledged in the comparative transcriptomics field.

## ACTIVITIES IN FINLAND

During her stay, Marie Semon discussed with [Pascal Hagolani](#) the choices made by the French team to simulate the evolution of two molars in occlusion. A strong interest has been shown by the Finnish team for this project, with ideas to specifically adapt the project to the occlusion of mammalian molars, thanks to the background in mammalian paleontology of the Finnish team.

After discussions with the Finnish team, it appeared that a collaboration with the Finnish team in fine genomic analyzes between species, by adding datasets as a control and by helping with the analysis between species was possible. Discussions on the choice of modifications to the original model to summarize the development of the molar along the bucco-lingual axis were also established.