

## Dr. Juliette de Meaux

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### “*Cis*-regulatory evolution and ecological divergence in the *Arabidopsis* genus”

Tuesday, March 27, 2018 - 11:00 a.m.

Salle Favard - IBENS - 46 rue d'Ulm - 75005 Paris

The evolution of gene regulation is a corner stone of adaptation. This evolution is sustained by *cis*-regulatory mutations, which can be individually characterized in  $F_1$  hybrids, and/or by *trans*-regulatory mutations, which simultaneously modify the expression of an array of target genes. We will show that in the *Arabidopsis* genus, functional *cis*-regulatory variation is pervasive. We will present data showing that collectively, *cis*-regulatory mutations provide an infinite reservoir sustaining the polygenic adaptation of functions targeted by natural selection. We have recently begun to explore the genetic architecture of interspecific differences in gene expression plasticity. This recent work reveals that *cis*- and *trans*-regulatory variants play distinct roles in the evolution of the response to dehydration stress in the *Arabidopsis* genus. We will discuss whether patterns of *cis*- and *trans*-regulatory variation can be collectively leveraged to unravel interspecific differences in the ecological role played by the diverse functions encoded in the genome.

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