



EvoLunch

# Genetics of epigenetics in *Arabidopsis thaliana*

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Host: Nick Barton

The possibility that stable, inherited, epigenetic variation could play an important role in plant adaptation has been around for decades. Recent studies in natural inbred lines of *Arabidopsis thaliana* showed that DNA methylation, an epigenetic mark, patterns are correlated with the climate of origin of the lines. DNA methylation could be important for plant adaptation in theory, but inference is confounded with underlying genetic variation driving methylation patterns. We do not fully understand the underlying causes of these correlations. Here we dissect the effects of genotype, environment and epigenetic inheritance on DNA methylation, by looking at the intercross populations. We confirmed the stable inheritance of DNA methylation marks and estimated epimutation rates. Additionally, we identified novel trans-regulators for DNA methylation using QTL mapping. These results suggest DNA methylation might indeed be important for plant adaptation, but is a part of genetic mechanism.

**Wednesday, April 6, 2022 12:30pm - 01:30pm**

I22 Lakeside View (I22.O1.006)



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