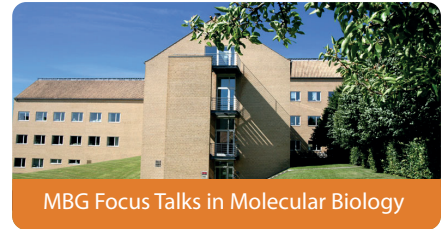


# MBG FOCUS TALK

hosted by Erik Østergaard Jensen



**Wednesday, March 20, 2019 at 9:15 - 10:00**

iNano Aud. 1593-012

## Arthur Korte

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## Natural Variation of Gene Regulatory Networks in *Arabidopsis thaliana*

Understanding the causal relationship between genotype and phenotype is a major objective in biology. The main interest is in understanding trait architecture and identifying loci contributing to the respective traits. Genome-wide association mapping (GWAS) is one tool to elucidate these relationships and has been successfully used in many different species. However, most studies concentrate on marginal marker effects and ignore epistatic and gene-environment interactions. These interactions are problematic to account for, but are likely to make major contributions to many phenotypes that are not regulated by independent genetic effects, but by more sophisticated gene-regulatory networks. A further complication arises from the fact that these networks vary in different natural accessions. However, understanding the differences of gene regulatory networks and gene-gene interactions is crucial to conceive trait architecture and predict phenotypes. I will present data on statistical approaches to tackle these challenges and present examples - using data from the Arabidopsis 1001 Genomes Project - of gene regulatory networks that have been realized differently in different natural accessions.