



Leaders from Biology Seminar

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Can we structure the microbiome of *Arabidopsis thaliana*?



Monday, February 25, 2019 | 12:00pm
HCK 132 Refreshments at 11:45am

As an ephemeral weed, *Arabidopsis thaliana* is seldom the primary host for its microbes and thus interacts extensively with generalist pathogens. These interactions are necessarily diffuse, with the selection imposed by the host being consequently weak. Nevertheless, *Arabidopsis* exhibits heritability of

the microbial communities that they support. In order to understand the relative roles of host genotype and the environment on natural microbial communities in the phyllosphere, we performed a GWAS experiment at four locations in Sweden across two years. We found substantial population structure in the microbial communities but consistent evidence that hosts shape these communities. A core microbiome exists among sites that is particularly prone to host control. This core is furthermore enriched for hub species that are highly heritable, with pervasive impacts on the microbial community. This targeted control of the microbiome by the host opens the door for breeding strategies that promote beneficial microbiomes *in planta*.

