

# Population Dynamics Virtual Seminar



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## Beyond antimicrobial activity: the promiscuous functions of specialized metabolites in *Bacilli*

Microbes produce a plethora of secondary (or specialized) metabolites (SM) that influence the growth and differentiation of other microorganisms. Many of these SMs are broadly exploited for their antibiotic properties, however, the primary functions in the natural niches are debated, especially at the scale of minute microbial communities.

In this talk, I will highlight the diversity of SMs in the *B. subtilis* species complex, describe laboratory examples how SMs influence microbial community assembly and chemodiversity, and present that *B. subtilis* adaptation in the presence of a fungus is mediated by SM overproduction.

**Suggested Readings:** Kiesevalter et al (2021) Genomic and chemical diversity of *Bacillus subtilis* secondary metabolites against plant pathogenic fungi. *mSystems* 6:e00770-20; <https://doi.org/10.1128/mSystems.00770-20>

Steinke et al (2021) Phylogenetic distribution of secondary metabolites in the *Bacillus subtilis* species complex. *mSystems* 6:e00057-21; <https://doi.org/10.1128/mSystems.00057-21>

Kiesevalter et al (2020) Secondary metabolites of *Bacillus subtilis* impact the assembly of soil-derived semisynthetic bacterial communities. *Beilstein J Org Chem* 16:2983–2998; <https://doi.org/10.3762/bjoc.16.248>