

# Microbial Community invasions: Theory, Modeling, and Experiments

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## Abstract

While invasion theory has been subject of study in macroecology for decades, it has only more recently been studied in microbial systems. Study of microbial invasions holds interest because better understanding of microbial invasions could aid in bioremediation efforts, disease management in humans and animals, and promoting agricultural crop growth. From a practical perspective, microbes are an attractive system for studying invasion theory due to the relative ease of doing controlled experiments compared to macroecology.

In this talk, I will present a brief overview of factors determining successful invasion from macro- and micro-ecology, as well as a summary of different models used to model invasion. I will end by presenting my work on an *in vitro* system to study invasion of synthetic human gut microbe communities by the pathogen *Clostridioides difficile*.