

Current Research Objectives

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Research topic: Pathogen-Host Interactions

Primary Research Objective(s): Understanding the Movement of HLB Bacteria inside the Plant and the Insect Vector

Research Goal: Reduce the Rate of HLB Spread by Abolishing the Ability of the HLB Bacteria to Move Throughout and Between the Plants

Outcomes to date: We have learned that inside the psyllid, the HLB bacteria interacts with very specific host factors in order to enter and exit the psyllid cells, and to generate a safe replicative niche inside them. These interactions are necessary for the bacteria to move while escaping the insect defense response. In the plant, our results indicate that the HLB bacteria is moving with the phloem flow, and accumulates at the growing parts of the plant. Association with host membranes seems to play an important role in the bacteria spread in both the plant and the insect.

We are working on disrupting these host interactions in order to abolish the ability of the bacteria to be transmitted by the insect, and to move throughout the plant. Identification of new targets for genetically engineering the plant and insect will lead to novel ways to control HLB spread.

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