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THE EFFECTS OF *DICTYOSTELIUM DISCOIDEUM* ON *BURKHOLDERIA* DISPERSAL

Moid Ali

Mentor: Joan Strassmann

Defined as the long-term, intimate association between organisms, symbiosis and its study has thus far largely focused on the evolutionary impact on the host while neglecting the consequences on the associated symbiont. While the role of microbes has been established as an important force in eukaryotic evolution, understanding the impact of eukaryotes on prokaryotic evolution has lagged behind. Recent publications from the Queller Strassmann Research Group center on the phenotypic advantage granted to *Dictyostelium discoideum* host amoebas from the symbiotic association with *Burkholderia* bacteria. Examining the selective advantages or disadvantages conferred upon *Burkholderia* in this relationship may help illuminate the evolutionary forces at the core of this symbiosis. Here, we have developed two novel experimental assays to detect novel traits associated with *Burkholderia* when associated with host amoebas. The Movement Assay measures horizontal distance traveled by the microbes while the Fly Wash Assay measures microbial ability to make contact with host vectors. Together, our findings indicate that host association may aid in *Burkholderia's* ability to access and disperse to new spaces with high variability across the tested strains.