

PROJECT SUMMARY

Symbioses are intimate associations between individuals of two different species that can have large effects on survivorship and fecundity. These widespread interactions can lead to evolutionarily novel traits that would not be expressed by either symbiont alone. However, the prevalence of a symbiosis depends on a dynamic balance of beneficial and detrimental effects, which can change with time and environmental conditions. This balance may lead to differences in growth and reproductive capabilities for hosts with symbionts as well as those without. How these differences may affect population dynamics is of primary importance to understanding the role of symbiosis on species persistence. In the proposed research, I will investigate how symbiosis alters host growth patterns and intraspecific interactions. I will use the *Glyceria striata*-*Epichloë glyceriae* plant-fungal system to: **1)** determine the direct effects of symbiosis on host growth pattern, **2)** examine a physiological mechanism for the growth pattern differences, and **3)** determine how different growth patterns effect spatial spread of infected and uninfected plants within the host population. These studies will shed light on how symbiosis may affect long-term symbiont persistence and higher order species interactions through changes in growth pattern.