

Soil fungal biology and ecology undergraduate student research internship
Laboratory of Dr. Marc A. Cubeta
Department of Entomology and Plant Pathology
Center For Integrated Fungal Research
Plant Soil Microbial Community Consortium
North Carolina State University, Raleigh, NC

Title: Iron and plant associated soil fungi

Iron is one of the most common elements on Earth and a critical metal needed for the growth, development and survival of living organisms. The availability and competition for iron is associated with soil pH and siderophores, which are low molecular weight compounds that chelate iron. Siderophores play an important role in the biogeochemical cycling of iron and interaction of fungi with plant roots in iron limited soils. In this project, experiments will be conducted to quantify and examine patterns of siderophore production in plant associated soil fungi in the laboratory. The intern associated with this project will be responsible for 1) isolating, culturing and preserving fungi, 2) quantifying siderophore production of fungi and assessing their effect(s) on fungal growth and development, 3) collecting, analyzing and interpreting experimental data, and 4) providing written and oral reports on research results. Additional experiments may be conducted to test the hypothesis that bacteria living inside these fungi can influence siderophore activity and production.