

## **Genome-enabled Investigations of the Role of Secreted Proteins and Reactive Metabolites in Carbon Degradation by Pure and Mixed Ascomycete Fungal Communities**

**Colleen Hansel (PI)<sup>1</sup>, Cara Santelli (Co-PI)<sup>2</sup>, Carolyn Zeiner<sup>3</sup>**

**<sup>1</sup>Woods Hole Oceanographic Institution, <sup>2</sup>Smithsonian Institution, <sup>3</sup>Harvard University**

**Abstract:** The Eumycete fungi (primarily Basidiomycota and Ascomycota) are key organisms in the degradation of wood, plant and animal material. While ascomycetes are less capable of rapid wood decay than basidiomycetes, they are considered more important lignocellulose degraders in compromised environmental systems. As our biogeochemical landscape continues to change, for instance through increasing soil temperatures, it can be assumed then that the relative role of ascomycetes in carbon processing will increase. Yet, the rates, mechanisms, and regulation of lignocellulose degradation by ascomycetes have undergone only minimal investigation and remain poorly understood.