



The Plant and Soil Sciences Department cordially

invites you to a seminar on

“Approaches to elucidate the molecular basis of rust
virulence in host and non-host systems”

By

Dr. Melania Figueroa
University of Minnesota

12:20PM—1:15 PM in 132 Townsend Hall



The yield losses caused by rust fungi can be devastating to the production of small grains. Stem rust in wheat and barley caused by *Puccinia graminis* f. sp. *tritici* (*Pgt*) and crown rust in oat caused by *Puccinia coronata* f. sp. *avenae* (*Pca*) represent two rust diseases that demand new resources to reduce the risk of disease outbreaks. To elucidate the molecular and genetic basis of virulence in *Pgt* and *Pca* we are integrating numerous complementary approaches including the construction of high quality enome assemblies and mutagenesis techniques. Furthermore, a system utilizing *Brachypodium* species has been established to study the basis of NHR against *Pgt* and *Pca*. In parallel, evaluation of the response of oat germplasm and wild relatives with a core collection of highly virulent *Pca* isolates is underway to detect novel sources of disease resistance.

Dr. Melania Figueroa was appointed Assistant Professor at the University of Minnesota (UMN) for the Department of Plant Pathology in August 2013. She is a member of both The Microbial and Plant Genomics Institute and the Stakman Borlaug Center (SBC) at UMN. Before joining UMN, she held two postdoctoral associate positions at the USDA-ARS and Oregon State University. Melania received her Ph.D. in Plant Pathology at the University of Arizona. Dr. Figueroa conducts research in the area of host-pathogen interactions and investigates the infection process of rust fungi that pose a threat to important staple crops such as wheat. She also provides leadership for teams responsible for the genomics and phenotyping platforms as part of the International Oat Rust Initiative. Overall, her research aims to provide tools and foundational knowledge necessary to enable crop improvement via conventional breeding or biotechnology-based methods.

