

## SEMINAR ANNOUNCEMENT

“Molecular genetic studies to characterize guava rust (*Puccinia psidii*): An invasive pathogen of native Hawaiian forests and a potential threat to Myrtaceae world-wide”

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**Honolulu: July 13, 2010 (10:00) UH, Manoa Ag. Sci. Rm. 220**  
**Hilo: July 15, 2010 (12:00) US Forest Service Conference Room**



*Puccinia psidii* causes rust disease of many species in the Myrtaceae family, including guava, eucalyptus, rose apple, and ohia. First reported in 1884 on guava in Brazil, the rust has since been detected in South America (Argentina, Brazil, Colombia, Paraguay, Uruguay, and Venezuela), Central America (Costa Rica, and Panama), Caribbean (Cuba, Dominica, Dominican Republic, Jamaica, Puerto Rico, Trinidad and Tobago, and Virgin Islands), Mexico, USA (Florida, California, and Hawaii), and most recently Japan. Of present concern is the recent introduction of the pathogen to Hawaii, where it infects an endemic tree species known as ohia (*Metrosideros polymorpha*), the dominant tree species in Hawaii's remnant native forests. Guava rust also poses serious threats to several of the Myrtaceae including *Eucalyptus*, a genus native to Australia and planted extensively in numerous tropical and subtropical countries. Despite the potential threats to many forest ecosystems world-wide and the expanding geographic range of this disease, little is known about the genetic structure of the pathogen populations, migratory routes and sources of introductions. To determine population genetic structure of the pathogen in the putative center of origin, approximately 150 single-pustule isolates of *P. psidii* have been collected from diverse host species and locations in Brazil and scored for variation at 12 microsatellite loci. Additional isolates have been collected from Hawaii, Puerto Rico, California, Paraguay, and Uruguay; and collaborators are currently being sought to sample isolates from other global regions. Collections from these putative introduced populations will facilitate inferences about the spread of this rust pathogen throughout the world. Preliminary results indicate that host species strongly influences population structure; distinct multilocus haplotypes are uniquely associated with specific hosts across diverse geographic locations. This information will help identify rust races that pose threats to global populations of Myrtaceae and help prevent their introduction into new regions.

### Biography



Rodrigo Neves Graça received his B.Sci. in Agronomy and his M.S. in Plant Pathology at the Federal University of Viçosa, Brazil. In March of 2007, he began his Ph.D. studies at the same university, with a one-year research period at Washington State University (Pullman WA) and the USDA Forest Service - Rocky Mountain Research Station (Moscow, ID). He is currently studying aspects of the genetic structure and evolution of *Puccinia psidii* (guava rust), an important emerging pathogen of Myrtaceous plants around the world.