

## PLANT PATHOLOGY 250 SEMINAR SERIES



**Speaker: Dr. Rytas Vilgalys, Biology Department, Duke University**

**Seminar Title: “Genetics of linked plant-fungal invasions: tracing the origin and evolution of microbial communities introduced with exotic pine forests in the southern hemisphere”**

**Date: Thursday October 8th, 2020**

**Time: 12:00-12:50 pm**

**Seminar Presented Via Zoom:**

<https://ucr.zoom.us/j/91605321917?pwd=UFBkRUVMbXVBQWN6c2lwSXdQc2l4UT09>

**Meeting ID: 916 0532 1917 Passcode: PLPA250**

**Abstract:** Centuries of exotic pine plantation forestry across the southern hemisphere was accompanied by the global cointroduction of symbiotic ectomycorrhizal fungi (EMF) communities which are essential for forest establishment and growth. Species diversity of these exotic EMF communities is greatly reduced relative to their native pine forest communities in the northern hemisphere. Wherever plantations have been introduced, subsequent invasion by pines into adjacent grassland/native forest is also accompanied/ facilitated by certain species of the exotic EMF community. We collected ITS metabarcode sequences from over 380 forest soils samples collected across the range of exotic pine forestry in Australia and New Zealand and compared these to communities growing with adjacent native forests from each region. In addition, we sampled soil under invasive "wilding" pines growing in each vicinity to identify EMF fungi that facilitate invasion by pines into native bush. Our results confirm the presence of a depauperate EMF community represented by a handful (<10) of the same EMF species which form the core-mycobiome of exotic pine forests. Multi-locus DNA barcoding of field-collections and herbarium specimens, and population genomics of selected EMF species are being used to trace the geographic origins and distribution of EMF co-introduced with exotic pine plantations across different continents. These studies provide new insight into the biogeography and plantation history of EMF introductions with different pine species.

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