

# 63rd FEFCO

Forest Ecosystem Function Colloquium (FEFCO) は、地域や地球全体のレベルで森林生態系の機能とその持続的活用法を統合的に理解することを目的とし、研究者間の学術交流を推進します。

第63回森林生態系機能コロキウムは、コロンビア大学よりMaria Uriarte教授にご講演いただきます。どなたでも参加できますので、多くの皆様のご参加をお待ちしております。京都大学農学研究科熱帯環境学研究室がホストを務めます。

63rd FEFCO

2023/4/12 16:30 - 18:00

Faculty of Agriculture Main Building, W306



↑ For online registration

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(Professor, Ecology, Evolution & Environmental Biology,  
Columbia University)

## Synergistic effects of droughts and hurricanes on Puerto Rican forests

Tropical forests are in a state of flux due to altered natural disturbance regimes including droughts and hurricanes, but our understanding of the compound effects of disturbances on forest ecosystems is extremely limited. We examined the relationship between hurricane response (damage, mortality, and resilience) and four hydraulic traits of 13 dominant woody species in a wet tropical forest subject to periodic hurricanes. Species with high resistance to embolisms and higher hydraulic safety margins were more resistant to immediate hurricane mortality and breakage, whereas species with higher hurricane resilience (rapid post-hurricane growth) had high capacitance and P50 values and low HSMs. During 26-years of post-hurricane recovery, we found a decrease in community weighted mean values for traits associated with greater drought resistance (turgor loss point—leaf turgor loss point,  $\Psi_{tlp}$ , P50, HSM) and an increase in capacitance, which has been linked with lower drought resistance. Hurricane damage favors slow-growing, drought-resistant species while post-hurricane high resource conditions favor acquisitive, fast-growing but drought-vulnerable species, increasing forest productivity at the expense of drought resistance and leading to higher overall forest vulnerability to drought.