The Laboratory of Tree-Ring Research

presents a talk by

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Coupling radial growth and reproduction in Mediterranean and tropical forests

Wednesday, October 5, 2016 - 12:00pm to 1:00pm

Room: Bannister 110

Negative interannual relationships between tree growth and reproduction may reflect allocation trade-offs or may simply result from dependence on different climatic conditions. Interspecific variation in how tree growth and reproduction respond to interannual climate variation provide insights into how tree species composition may be altered under future climate change. Long-term growth, reproduction and climatic records were used to investigate how climate, tree radial growth and reproduction patterns are related in in two different regions, Mediterranean and tropical. Pinus halepensis (Aleppo pine) forests are the most abundant Circum-Mediterranean ecosystems subjected to frequent wildfires and summer droughts. Aleppo pine is an obligate seeder species that reproduces at an early age after fire. Such precocious behavior poses the question as to whether post-fire regeneration in this species depends on moisture conditions and the coupling between female cone production and growth. In Panama, we evaluated if radial growth and reproduction are linked in three tree species at a moist tropical forest of the Barro Colorado Nature Monument (BCNM). We discard trade-off effects at both study regions. In the Mediterranean forest, we found that a more positive water balance improves post-fire regeneration by enhancing growth and cone production, whereas interannual variation in reproduction in the tropical forest is not generally associated with growth and has distinct and species-specific climate responses.

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