The Laboratory of Tree-Ring Research

presents a talk by

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Florida tree rings and shipwreck rates reflect Caribbean hurricane activity since 1500

Wednesday, October 15, 2014 - 12:00pm to 1:00pm
Room: Bannister 110

The observational record of North Atlantic tropical cyclones (TCs) is too short to inform our understanding of decadal-scale climatic controls on TC regimes. We combined two new annual-resolution proxies of Atlantic storm activity to extend the observational TC record back to the 16th Century. A tree-growth suppression chronology (1707–2010 CE) from the Florida Keys captures 91% of observed North Atlantic TCs (1850–2010 CE) and shares significant peak events with a documentary time series of Spanish shipwrecks in the Caribbean (1495–1820). Decadal-scale shipwreck rates were lowest during the Maunder Minimum (ca. 1645–1715), indicating that cooler Atlantic sea surface temperatures (SSTs) during this period reduced Caribbean TC activity. Our results are supported by other Atlantic TC and sea surface temperature (SST) proxy data and suggest that cooler tropical Atlantic SSTs and a generally negative mode of the North Atlantic Oscillation during the Little Ice Age resulted in reduced Atlantic TC frequency.

The University of Arizona