The Laboratory of Tree-Ring Research

presents a talk by

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Tree-Rings and the Coupled Carbon Cycle Climate System

Monday, April 27, 2015 - 3:00pm to 4:00pm
Room: Bannister 110

Forest ecosystems are one of Earth's primary biomes: they provide a diverse suite of ecosystems goods and services crucial for societal well-being and play a crucial role in our planet's carbon cycle. However, great uncertainties exist regarding the quantification, dynamics, and driving processes of terrestrial carbon cycling, and thus also the fate of forested regions. Dendrochronological methods are remarkably well suited to investigate forest carbon cycling on long and temporally precise time-scales and at tree-level to continental spatial scales. In this talk, I will give an overview of some recent advances in using tree-ring data to i) improve empirical estimates of the climate sensitivity and feedbacks of terrestrial carbon cycling, ii) understand the consequences of increased CO2 concentrations on plant functioning, iii) quantify annually-resolved variability in forest biomass accumulation, and iv) investigate sub-annual variations in growth and carbon uptake. I will also highlight the use of tree-ring data to benchmark components of Earth System Models and provides perspective on future research avenues.

The University of Arizona