THE LABORATORY OF TREE-RING RESEARCH

presents a talk by

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An integrated field data collection system for dendrochronology

Wednesday, October 8, 2014 - 12:00pm to 1:00pm
Room: Bannister 110

A wide variety of information or 'metadata' is required when undertaking dendrochronological sampling. Traditionally, researchers record observations and measurements on field notebooks and/or paper recording forms, and use digital cameras and hand-held GPS devices to capture images and record locations. In the lab, field notes are often manually entered into spreadsheets or personal databases, which are then sometimes linked to images and GPS waypoints. This process is both time consuming and prone to human and instrument error. Specialized hardware technology exists to marry these data sources, but costs can be prohibitive for small scale operations (>$2,000). Such systems often include proprietary software that is tailored to very specific needs and might require a high level of expertise to use. We report on the successful testing and deployment of a dendrochronological field data collection system utilizing affordable off-the-shelf devices (~$300). The method builds upon established open source software that has been widely used in developing countries for public health projects as well as to assist in disaster recovery operations. It includes customizable forms for digital data entry in the field, and a marrying of accurate GPS location with geotagged photographs (with possible extensions to other measuring devices via Bluetooth) into structured data fields that are easy to learn and operate. Digital data collection is less prone to human error and efficiently captures a range of important metadata. In our experience, the hardware proved field worthy in terms of size, ruggedness, and dependability (e.g., battery life). The system integrates directly with the Tellervo software to both create forms and populate the database, providing end users with the ability to tailor the solution to their particular field data collection needs.

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