**Presentation Title:** Modeling Tree Volume from Geometric First Principles

**Abstract:** Modeling tree volume based on observations of diameter and height is an important practice in Forestry and related fields. Statistical methods are typically linear regression with basic transformations of the two variables. In this project, we model a tree as a truncated cone, with just one uncertain parameter relating the unknown upper radius to the observed lower radius. We then employ a grid search to fit the parameter to the data and then bootstrapping to estimate the uncertainty and prediction error of the model. The geometry-inspired model performs accurately when compared to traditional linear regression and potentially provides additional physical insight.