

Phenotypic and Genetic Characterization of Figured Wood in *Populus*

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Goals:

Understand the control of figured
wood formation.

Statement of Problem:

Figure in wood results from combinations of color, luster, texture, and grain. It is one of the many attractive qualities of wood. It also provides an example of a way to add value to traditional wood products. The desire to have high-quality figure has led us to explore the mechanism underlying its formation. For decades, people have debated the role of environmental and genetic effects on figure formation, yet it is still unknown. We believe that characterizing the cytological basis of figured wood is an essential first step. In addition, various candidate genes that may cause changes in wood properties have been selected based on the annotations of genes from heterologous plant species and sequence information derived from the [Populus genome project](#). The functionality of these genes will be tested *in planta*.

Current Activities:

We are evaluating the cytological basis for figure in a poplar genotype that strongly exhibits figure ('Grober'). We are also testing effect of root stock on the formation of figure in scion wood derived from trees lacking figure. In addition, a 3,000-individual F₁ population has been produced from a cross between A502 (*Populus alba*, female) and Grober. This resource will be used in our attempt to identify native poplar gene(s) associated with figure formation. Constructs containing candidate genes are now being assembled.