UF IFAS UNIVERSITY of FLORIDA

SCHOOL OF FOREST RESOURCES & CONSERVATION

ACCELERATING TREE BREEDING USING GENOMICS

A McIntire-Stennis supported project since 2014

In this project we are accelerating the genetic improvement of commercial forest by developing advanced methods such as DNA genomic analysis to identify and select superior trees.

The forest products industry is among the main manufacturing industries in the USA, supported by a continuous increase in consumption of timber products. However, there has been a steady decline in the timberland area for urban and industrial use, requiring that more wood be produced from less land through genetic improvement. We have shown that the application of genomic technologies can more than 2× the rate by which improvement can be made to the growth of trees.

The knowledge generated in this project is directly transferred to industry members through the public-private Cooperative Forest Genetics Research Program. By applying this knowledge to the industry breeding programs we can demonstrate the remarkable gains that can be achieved with advanced DNA technology.

About McIntire-Stennis

The McIntire-Stennis program, a unique federal-state partnership, cultivates and delivers forestry and natural resource innovations for a better future. By advancing research and education that increases the understanding of emerging challenges and fosters the development of relevant solutions, the McIntire-Stennis program has ensured healthy resilient forests and communities and an exceptional natural resources workforce since 1962.

USDA

COLLABORATION

In partnership with:
Cooperative Forest Genetics Research Program (CFGRP)

IMPACT

Incorporation of these advanced technologies to commercial breeding programs from industry cooperators.

2X Breeding Rate

Demonstrated that the rate of tree breeding gain can be more than doubled by the application of DNA analysis technology to traditional improvement programs.