

# THE FOREST BIOLOGY RESEARCH COOPERATIVE

**MISSION:** *To optimize productivity, health and sustainability of intensively managed forest ecosystems by investigating the interactions among genetics, silviculture, insects and disease, competition, nutrition and soils.*

<b>PHASE I 1996-2001</b>	Understanding forest stand dynamics and productivity utilizing established trials while planning and establishing core FBRC field experiments.
<b>PHASE II 2001-2006</b>	Investigating genetic control of complex traits and the interactions between genotype and environment by capitalizing on and leveraging established regional field experiments.
<b>PHASE III 2006-2011</b>	Strengthen the FBRC's leadership position in the development of clonal forestry. Development of genetically improved feedstocks and management tools for sustainable biomass production suitable for forest biorefinery applications.
<b>PHASE IV 2011-2016</b>	Carry out FBRC's mission to optimize productivity, health and sustainability through three research focal areas: Genetic resistance to diseases; Crown as integrator of genetic and environmental responses; and Sustainability of intensive management.

## CORE LARGE-SCALE FIELD STUDIES

**PPINES** - "Pine Productivity Interactions on Experimental Sites" - Factorial full-sib family block plot study with spacing and cultural treatments designed to detect genotype X environment interactions; 8 locations (est. 2000-LCP, 2003-WG)

**CCLONES** - "Comparing Clonal Lines ON Experimental Sites" - Single-tree-plot clonal biology study designed to maximize quantitative genetics power; one trial thinned 2013 to examine genetics of thinning response; 16 locations, 2000 loblolly and slash pine clones (est. 2003, 2007)

**VARIETIES** - "Varietal ARchitecture Investigations Examining Tree Interactions on Experimental Sites" - Clonal block plot trial investigating competition dynamics of architecturally contrasting ideotypes, including the effects of spacing and thinning; (est. 2009, 2010)

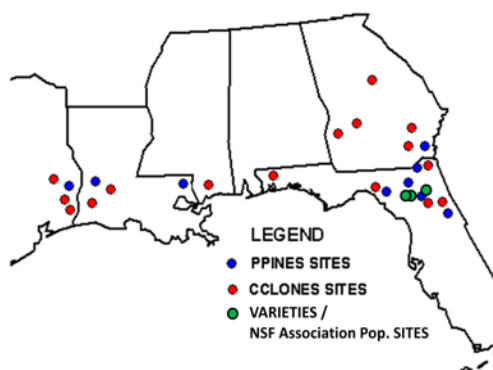
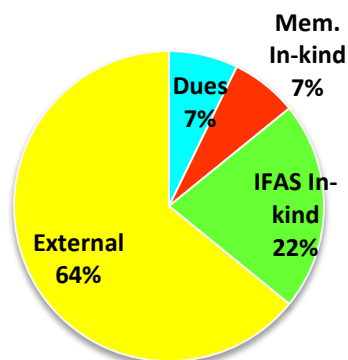
**IMPAC II and SSPS** - "Silvicultural Sustainable Productivity Study" - Multi-rotation sustainability trials installed on top of previously-monitored, full-rotation experiments (est. 2009, 2013)

**DH<sup>2</sup> Loblolly x slash backcross** - Identifying potential for introgression of nutrient response genes from loblolly to slash (est. 2013)

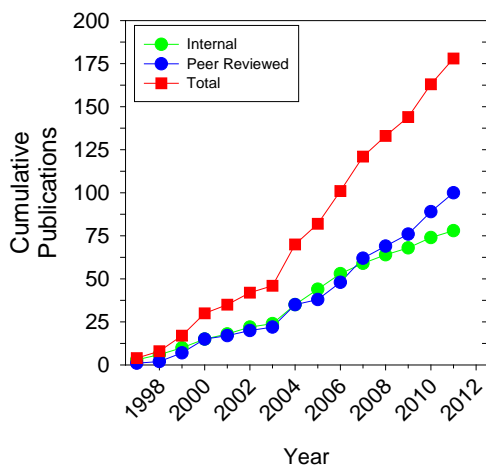
**SSIGNS** - "Site Specific Interactions of Genetics, Nutrition, Soils" - Test elite full sib loblolly families across a matrix of soil types and nutrient management regimes to determining relative importance of soil x nutrition x genetic interactions, and to better understand those factors that may limit operational plantation performance (first series est. 2013)

**2007-2012 TOTAL FUNDING = \$5.77 million**

Not included in total: UF leads two cooperative-leveraged, federally-funded multi-institutional research projects totaling \$26 million



## RESEARCH OUTPUTS



## INTERDISCIPLINARY TEAM

### Co-Directors

John Davis, SFRC, Genetics and Molecular Biology  
Eric Jokela, SFRC, Silviculture and Forest Soils  
Tim Martin, SFRC, Tree Physiology  
Gary Peter, SFRC, Molecular Bio. and Wood Formation

### Cooperating Faculty and Staff

Salvador Gezan, SFRC, Quantitative Genetics and Biometrics  
Jason Vogel, TX A&M, Silviculture and Forest Ecology  
Carlos Gonzalez, SFRC, Research Associate  
Tania Quesada, SFRC, Postdoctoral Associate  
Josh Cucinella, SFRC, Field Coordinator  
Wilson Lewis and Fletcher Yancey, SFRC, Field Technicians

## COOPERATORS

*Industrial and Timberland Investment Firms:* ArborGen, Plum Creek Timber Company, Rayonier, Resource Management Service, LLC, St. Joe Company, Weyerhaeuser Co.; Together, the FBRC's industrial cooperators are responsible for the management of 16 million acres of forestland in the United States (10 million acres in the southern U.S.) and produce 95% of the southern pine seedlings planted in the region.

*Consulting Foresters:* F&W Forestry Services, Inc.

*Government:* US Forest Service Southern Research Station

## IMPACTS on MANAGEMENT and SCIENCE

"The Annual Report clearly shows the breadth and depth of research that has been undertaken by the FBRC and the results that are being generated from these investments. It's an impressive document and I'm sure we'll be gleaming information from it for a while." Senior Research Scientist, ArborGen LLC

"...one of the best efforts at understanding forest productivity in the country...These [FBRC Reports] have great value to my research program and over the years a great many findings have influenced the way we do business in the field of production forestry from fertilization to biotechnology." Manager, Forest Productivity, Plum Creek

"I enjoyed your presentation on [disease] resistance screening. We can probably make use of the information in the near-term when making deployment decisions for various families from our seed orchards." Tree Improvement Scientist, Rayonier

"FBRC data are consistently among the highest quality produced by any cooperative in the country." Manager of Growth and Yield Research, Rayonier

"The FBRC is the number one center for University-led forest biology research in the USA." Clonal Forestry Scientist, ArborGen LLC

## MEMBERSHIP CATEGORIES

Contributing members may attend meetings, give input to study design, and receive annual reports. Full members vote as Advisory Council and Scientific Committee members, receive annual and interim reports, have access to raw data, and may receive consulting services and field trial design and analysis assistance.