

Member Benefits

As a National Science Foundation Industry/University Cooperative Research Center, CAFS is able to leverage funding, making the most of research and development investments. CAFS Members receive direct transfer of academic knowledge and industry-relevant research. Other Member benefits include:

- Facilitated collaboration between industry representatives and top university researchers.
- Cost-effective access to emerging technologies and state-of-the-art research facilities.
- Meeting and developing working relationships with bright graduate and undergraduate students.
- Direct access to forestry systems research that transcends traditional species, regional, and disciplinary boundaries.
- Source of renowned expertise and worldwide collaboration.
- The opportunity to help shape the future of advanced forestry systems research.

If your company or university is interested in learning more about CAFS, please contact Dr. Barry Goldfarb, director of CAFS, or one of the Site Directors. Contact information is provided on the back of this brochure.



NC STATE UNIVERSITY



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CAFS

Center for Advanced Forestry Systems



A National Science Foundation Industry/University Cooperative Research Center
NC State University · Oregon State University · Purdue University · Virginia Tech

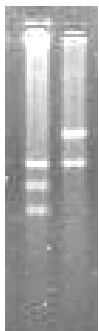
Center Overview

The Center for Advanced Forestry Systems (CAFS) is a National Science Foundation Industry/University Cooperative Research Center (NSF I/UCRC). CAFS bridges top forestry research programs with industry members to solve complex, industry-wide problems.

The mission of CAFS is to optimize genetic and cultural systems to produce high-quality raw forest materials for new and existing products by conducting collaborative research that transcends traditional species and disciplinary boundaries.

Research Areas

CAFS builds on the strengths of four of the top forestry research programs in the United States to create a multi-university, interdisciplinary center that works to solve problems through multi-faceted approaches. CAFS scientists approach research questions on multiple scales, including molecular, cellular, individual-tree, stand, and ecosystem levels. This effort includes the participation of scientists with expertise in:



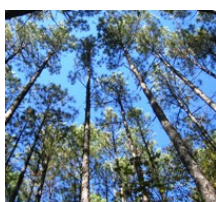
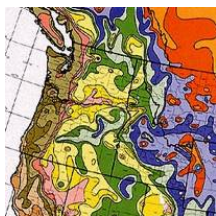
- Biotechnology
- Genomics
- Ecology
- Physiology
- Soils
- Silviculture
- Bioinformatics
- Modeling
- Remote sensing
- Spatial analysis

CAFS Academic Partners

North Carolina State University (Lead Institution)
 Virginia Polytechnic Institute and State University
 Oregon State University
 Purdue University



Center for Advanced Forestry Systems



CAFS Members and Academic Partners collaborate to identify and address pressing research needs that are of interest to industry and academia. The following are **Highlights from current CAFS projects**:

Varietal Precision Silvicultural Regimes Based on Crown Ideotype—will enable to more efficiently screen clones for operational deployment, and develop site-specific silvicultural regimes to optimize growth of specific varieties.

Resource Driven Growth and Yield Model—will provide a growth and yield system that effectively utilizes spatial and temporal information to improve prescriptions (lower costs) and give higher yields from plantations.

Effects of Site and Genetics on Douglas-fir Growth, Stem Quality, and Adaptability—will enhance the ability to predict the growth, stem quality, and adaptability of Douglas-fir plantations, refine breeding and deployment zones, and understand the potential effects of climate change.

Flowering Control in Fine Hardwood Trees—will provide a robust system for prevention of transgene escape from tree plantations, which is likely to be a prerequisite for commercial deployment of genetically engineered trees.

Regulation of Heartwood Formation in Black Walnut—narrows the search for genes that regulate the shift from living to dead wood, creating opportunities to manipulate the process, and sheds light on the regulation of plant cell death in response to pathogens or stress.

Influence of *phyB* Genes on Stem Form in Poplar—useful for intentional marker-based or transgenic breeding to produce desired tree ideotypes, potentially leading to higher harvest index for bioenergy and pulp plantations.

Growth and Yield Predictions for Diverse Genotypes and Silvicultural Practices—will allow members to reliably estimate wood volume and quality for a spectrum of genotypes and management inputs.

CAFS Members

AGROTAIN	Green Diamond Resource Co.	Rayonier
American Forest Management	Greenwood Resources	Renewable Resources LLC
Arauco-Bioforest, SA	Hancock Forest Management	Resource Management Service, LLC
ArborAmerica	Indiana Hardwood Lumbermen's Assoc.	RMK Timberland Fund
ArborGen	Imagetree	Roseburg Forest Products
BASF	International Plant Nutrition Inst.	Scotch Lumber Company
Bayer Environmental Science	Jordan Lumber Company	Smurfit Carton de Colombia
Bureau of Land Management,	Larson and McGowin, Inc.	Smurfit Carton de Venezuela
Eugene District Office	Lee Forestry	Steelcase
Cascade Timber Consulting, Inc.	Longview Fibre Co. Timber Dept.	Stimson Lumber Company
CellFor	MeadWestvaco Corporation	Sonoco
ConAgra International Fertilizer	Milliken Forestry Company, Inc.	Superior Pine Products Company
Dougherty & Dougherty Forestry	Molpus Timberlands Management, LLC	Synagro
DuPont Agricultural Products	Mondi Business Paper South Africa	The Campbell Group
Forest Capital Partners	NC Dept of Forest Resources	The Westervelt Company
Forest Investment Assoc.	National Hardwood Lumber Assoc.	Thrash Aviation, Inc.
Forestaciones Operativas de México	Olympic Resource Management	TimberStar Southwest
Forestal Bosques del Plata	Oregon Department of Forestry	USDA Forest Service
Forestal Mininco	Payne's Flying Service	Van Eck Foundation
Forestry & Land Resource	Plum Creek Timber Company	Virginia Department of Forestry
Consultants, Inc.	Port Blakely Tree Farms	Washington State DNR
FORSight Resources, LLC	Potlatch Forest Holdings	Weyerhaeuser