CAFS Research Projects, Phases 1-3

#	CAFS Phase	Topic Area	CAFS Proj. #	Project Title	Lead Site	PI(s)	Multi-Site	NCSU	PU	VT	UGA	OSU	UM	UI	UW	AU	UF
1	I	Genetics	8.01	Developing Varietal Precision Silvicultural Regimes in Pine and Hardwood Plantations Based on Crown Ideotype	NCSU	Stape	1	1	1	1	0	0	0	0	0	0	0
2	I	Genetics	8.03	Effects of Site and Genetics on Douglas-fir Growth, Stem Quality, and Adaptability	OSU	Howe	0	0	0	0	0	1	0	0	0	0	0
3	I	Genetics	8.04	Flowering Control in Fine Hardwood Trees	PU	Meilan	0	0	1	0	0	0	0	0	0	0	0
4	I	Genetics	8.05	Regulation of Heartwood Formation in Black Walnut	PU	Woeste	0	0	1	0	0	0	0	0	0	0	0
5	I	Genetics	8.06	Influence of phyB Genes on Stem Form in Poplar	OSU	Dharmawardhana	0	0	0	0	0	1	0	0	0	0	0
6	I	Genetics	8.07	Inducible Production of PHB Biopolymers in Poplar	OSU	Dharmawardhana	0	0	0	0	0	1	0	0	0	0	0
7	I	Growth Modeling	8.08	Developing Growth and Yield Predictions for Diverse Genotypes and Silvicultural Practices	VT	Burkhart	0	0	0	1	0	0	0	0	0	0	0
8	I	Growth Modeling	9.09	Developing Growth and Yield Predictions for Enhanced Genotypes	UGA	Borders	0	0	0	0	1	0	0	0	0	0	0
9	I	Growth Modeling	9.10	Refinement of Regional Growth and Yield Models for Naturally-Regenerated, Mixed Species Stands in the Northeast	UM	Weiskittel	0	0	0	0	0	0	1	0	0	0	0
10	I	Growth Modeling	9.11	Development of a Hybrid Model for Natural Stands in the Northeastern US	UM	Weiskittel	0	0	0	0	0	0	1	0	0	0	0
11	I	Genetics	9.12	Growth Analysis of Fast Growing GA-modified Poplars	OSU	Howe	0	0	0	0	0	1	0	0	0	0	0
12	I	Management	9.13	Developing Improved Understanding of Relationships between Stand Response to Thinning and Post-thinning Treatments	VT	Fox	1	1	0	1	1	0	0	0	0	0	0
13	I	Growth Modeling	9.14	Evaluation of the Potential Productivity of Loblolly Pine in Southeastern US using a Twin-Plot Approach across Geological-Climatic Gradients	NCSU	Stape	1	1	0	1	1	0	0	0	0	0	0
14	I	Growth Modeling	9.15	Assessing Regional Potential Productivity under Current and Potential Climate Change in Northeastern US	UM	Weiskittel	0	0	0	0	0	0	1	0	0	0	0
15	I	Growth Modeling	9.16	Integrating Wood Quality Predictions into Growth and Yield Models for Evaluating Advanced Genotypes and Silvicultural Responses	UGA	Daniels	0	0	0	0	1	0	0	0	0	0	0
16	I	Management	9.19	Understanding Site-Specific Factors Affecting the Nutrient Demands and Response to Fertilizer by Douglas-fir	UW	Harrison	0	0	0	0	0	0	0	0	1	0	0
17	I	Wood Quality	9.21	Modeling the Effects of Intensive Plantation Silviculture on Wood Density and Stiffness	UW	Briggs	0	0	0	0	0	0	0	0	1	0	0
18	I	Remote Sensing	9.22	Remote Sensing for Measuring and Monitoring the Response of Plantations to Intensive Management	UW	Briggs	0	0	0	0	0	1	0	0	1	0	0
19	I	Genetics	10.25	Scaling Competitive Dynamics from the Individual to the Stand Using Clonal and Full-Sib Family Block Trial	UF	Jokela	0	0	0	0	0	0	0	0	0	0	1
20	I	Forest Health	10.26	Select endophytes for improvements of growth and disease resistance in forest trees	UI	Newcombe	0	0	0	0	0	0	0	1	0	0	0
21	I	Genetics	10.27	Floral transcriptomics of eucalypts	OSU	Strauss	0	0	0	0	0	1	0	0	0	0	0
22	I	Genetics	10.28	Genetic Architecture of Growth, Disease Resistance and Wood Quality Traits in Loblolly Pine	UF	Peter	0	0	0	0	0	0	0	0	0	0	1
23	I	Forest Health	10.29	Testing systemic insecticides against multiple seed orchard pests commonly present in the intermountain west	UI	Cook	0	0	0	0	0	0	0	1	0	0	0
24	I	Genetics	10.31	Early genetic selection for wood stiffness in Douglas-fir	OSU	Howe	0	0	0	0	0	1	0	0	0	0	0
25	I	Management	10.32	Examining the influence of precommercial and commercial thinning in balsam fir and red spruce stands across Maine	UM	Wagner	0	0	0	0	0	0	1	0	0	0	0
26	I	Management	10.33	Use of Stable Isotopes to Trace the Fate of Applied Nitrogen in Forest Plantations to Evaluate Fertilizer Efficiency and Ecosystem Impacts	PU	Jacobs	1	0	1	1	0	0	0	0	1	0	0
27	I	Wood quality	11.35	Impact of genetic gain, weed control and spacing on wood stiffness, density, and knot index in a large-plot trial of Coastal Douglas-fir	UW	Turnblom	0	0	0	0	0	0	0	0	1	0	0
28	I	Genetics	12.36	Development of Genetic Markers for Western White Pine and Douglas-fir: Rust et al.	UI	Rust	1	0	0	0	0	1	0	1	0	0	0
29	I	Growth Modeling	12.38	Extending the Acadian Variant of the Forest Vegetation Simulator (FVS) to Managed Stands in the Northeast US: Weiskittel and Wagner	UM	Weiskittel	0	0	0	0	0	0	1	0	0	0	0
30	I	Genetics	13.42	FT genes for accelerating flowering in Eucalyptus: Strauss and Klocko	OSU	Strauss	0	0	0	0	0	1	0	0	0	0	0
31	I	Management	13.44	Individual-tree response to commercial thinning in northern Maine: Influence of including competition, site, and treatment regime in growth and yield models: Bataineh et al.	UM	Batanieh	0	0	0	0	0	0	1	0	0	0	0
32	I	Wood Quality	13.46	Linking growth modeling to product quality for loblolly pine: Dahlen et al.	UGA	Dahlen	0	0	0	0	1	0	0	0	0	0	0
33	I	Management	13.48	Competing vegetation characterization and assessment in mid-rotation loblolly pine stands for the development of decision support tools: Stape et al.	NCSU	Stape	1	1	0	1	0	0	0	0	0	0	0
34	I	Management	14.54	Root development and morphological comparisons of container-grown loblolly pine and subsequent productivity after establishment: Enabak and Starkey	AU	Enabak	0	0	0	0	0	0	0	0	0	1	0
35	I	Management	09.13	Developing Improved Understanding of Relationships between Stand Response to Thinning and Post-thinning Treatments: Kane et al.	UGA	Kane	1	1	0	1	1	0	0	0	0	0	0
36	I	Management	12.37	Determining phases of growth and relative stand densities for optimal response to thinning: Coleman et al.	UI	Coleman	0	0	0	0	0	0	0	1	0	0	0

37	I	Growth Modeling	12.39	Modeling tree-to-tree competition, in forest trials, to understand its mechanisms	UF	Gezan	0	0	0	0	0	0	0	0	0	0	0	1
38	I	Remote Sensing	12.40	Calibrating estimates of above- and belowground forest biomass using remotely sensed metrics	UW	Moskal	0	0	0	0	0	0	0	0	1	0	0	
39	I	Management	12.41	Nitrogen-Fixing Microbial Symbionts of Conifers for Increased Forest Productivity with Less Fertilizer:	UW	Ettel	0	0	0	0	0	0	0	0	1	0	0	
40	I	Forest Health	14.50	Selection of genetically superior trees for disease resistance as a function of wood chemistry: Eckhardt et al.	AU	Eckhardt	0	0	0	0	0	0	0	0	0	1	0	
41	I	Forest Health	15.62	Quantifying the impact of pine decline in the southeastern United States	AU	Nadel	0	0	0	0	0	0	0	0	0	1	0	
42	II	Wood Quality	11.35	Impact of genetic gain, weed control and spacing on wood stiffness, density, and knot index in a large-plot trial of Coastal Douglas-fir: Turnblom et al.	UW	Turnblom	0	0	0	0	0	1	0	0	1	0	0	
43	II	Genetics	12.36	Development of Genetic Markers for Western White Pine and Douglas-fir: Rust et al.	UI	Rust	1	0	0	0	0	1	0	1	0	0	0	
44	II	Growth Modeling	12.38	Extending the Acadian Variant of the Forest Vegetation Simulator (FVS) to Managed Stands in the Northeast US: Weiskittel and Wagner	UM	Weiskittel	0	0	0	0	0	0	1	0	0	0	0	
45	II	Genetics	13.42	FT genes for accelerating flowering in Eucalyptus: Strauss and Klocko	OSU	Strauss	0	0	0	0	0	1	0	0	0	0	0	
46	II	Management	13.44	Individual-tree response to commercial thinning in northern Maine: Influence of including competition, site, and treatment regime in growth and yield models: Batainehet al.	UM	Batanieh	0	0	0	0	0	0	1	0	0	0	0	
47	II	Wood Quality	13.46	Linking growth modeling to product quality for loblolly pine: Dahlen et al.	UGA	Dahlen	0	0	0	0	1	0	0	0	0	0	0	
48	II	Management	13.48	Competing vegetation characterization and assessment in mid-rotation loblolly pine stands for the development of decision support tools: Stape et al.	NCSU	Stape	1	1	0	1	1	0	0	0	0	0	0	
49	II	Management	14.49	Do below ground processes such as soil nutrient dynamics, root nutrient uptake and carbon allocation patterns explain differences in growth, productivity, and carrying capacity? Fox et al.	VT	Fox	1	1	1	1	0	1	0	0	0	0	0	
50	II	Genetics	14.51	Production and analysis of flowering-modified eucalypts: Strauss	OSU	Strauss	0	0	0	0	0	1	0	0	0	0	0	
51	II	Growth Modeling	14.58	Developing a region-wide modeling system for estimating future productivity of loblolly pine plantations: Burkhart et al.	VT	Burkhart	0	0	0	1	0	0	0	0	0	0	0	
52	II	Growth Modeling	18.71	Development of small tree growth and survival equations for the commercially important species in the Acadian Region	UM	Puhlick	0	0	0	0	0	0	1	0	0	0	0	
53	II	Forest Health	18.72	Modeling the influence of Spruce Budworm on Forest Productivity	UM	Chen	0	0	0	0	0	0	1	0	0	0	0	
54	II	Management	18.73	Aboveground Nutrient Biomass on LTSP Sites as influenced by Site, Harvest Removals, Weed Control, and Compaction	UW	Turnblom	0	0	0	0	0	0	0	0	1	0	0	
55	II	Genetics	18.74	Using technology to improve modeling efforts for quantifying genetic gain in loblolly pine plantations	UGA	Montes	0	0	0	0	1	0	0	0	0	0	0	
56	II	Growth Modeling	09.09	Developing Growth and Yield Predictions for Enhanced Genotypes: Borders et al.	UGA	Borders	1	0	0	0	1	0	0	0	0	0	0	
57	II	Management	09.13	Developing Improved Understanding of Relationships between Stand Response to Thinning and Post-thinning Treatments: Kane et al.	UGA	Kane	0	0	0	0	1	0	0	0	0	0	0	
58	II	Management	09.19	Understanding Site-Specific Factors Affecting the Nutrient Demands and Response to Fertilizer by Douglas-fir: Harrison et al.	UW	Harrison	0	0	0	0	0	0	0	0	1	0	0	
59	II	Management	12.37	Determining phases of growth and relative stand densities for optimal response to thinning: Coleman et al.	UI	Coleman	0	0	0	0	0	0	0	1	0	0	0	
60	II	Management	14.49.PU	Exploring Internal and External Controls of Plantation Black Walnut Growth and Allocation Patterns	PU	Jacobs	0	0	1	0	0	0	0	0	0	0	0	
61	II	Management	15.60	Assessing stand characteristics of enhanced genetics in loblolly pine plantations in the Southeast.	UGA	Bullock	0	1	0	1	1	0	1	0	0	0	0	
62	II	Management	15.61	Appraising Rotation-age Tree and Stand Characteristics in a 1970's Decadal Cohort of Douglas-fir Plantations in the PNW	UW	Turnblom	1	0	0	0	0	1	0	0	1	0	0	
63	II	Management	15.63	Evaluting management options in beech-dominated stands	UM	Wagner	0	0	0	0	0	0	1	0	0	0	0	
64	II	Management	15.64	Does Commercial Thinning Improve the Growth Response and Upper Diameter Distribution Potential of Forest Stands?	UM	Bose	1	0	0	1	0	0	1	0	1	0	0	
65	II	Management	15.65	Assessing impacts of Soil Parent Material and "Responsiveness" to Fertilization on Stand and Tree Wood Properties in mid-rotation Coastal U.S. Douglas-fir Plantations using a paired-tree approach	UW	Littke	0	0	0	0	0	0	0	0	1	0	0	
66	II	Growth Modeling	16.65	Understanding and modeling competition effects on tree growth and stand development across varying forest types and management intensities	VT	Burkhart	1	0	0	1	0	0	1	0	1	0	0	
67	II	Genetics	16.66	Genomic Selection for Douglas-fir Tree Improvement	OSU	Howe	0	0	0	0	0	1	0	0	0	0	0	
68	II	Forest Health	16.67	Improving White Pine Seedling Survival by Combining Blister Rust Resistance with Defense-enhancing Endophytes:	UI	Newcombe	0	0	0	0	0	0	0	1	0	0	0	
69	II	Genetics	16.68	Response of Superior Western Larch Families to Site Quality and Competition Control	UI	Nelson	0	0	0	0	0	0	0	1	0	0	0	

70	II	Management	16.69	Stand and Tree Responses to Late Rotation Fertilization	UW	Turnblom	0	0	0	0	0	1	0	0	1	0	0
71	II	Forest Health	17.70	The Rise of Commercially Less Desirable Species in Maine: Identification, Characterization, and Associated Driving Factors	UM	Bose	0	0	0	0	0	0	1	0	0	0	0
72	II	Growth Modeling	19.75	Assessing and mapping regional variation in potential site productivity	NCSU	Cook	1	1	1	1	1	1	1	1	1	0	0
73	II	Growth Modeling	19.76	Assessing and mapping regional variation in site carrying capacity	UI	Coleman	1	1	1	1	1	1	1	1	1	0	0
74	II	Genetics	19.77	INTERN: Gains from advanced genetics western larch across the Inland Northwestern United States	UI	Nelson	0	0	0	0	0	0	0	1	0	0	0
75	III	Genetics	20.78	Intraspecific hydraulic responses of commercial tree seedlings to nursery drought conditioning	UI	Nelson/Jacobs/Gonzalez	1	0	1	0	0	1	0	1	0	0	0
76	III	Remote sensing	20.79	Multi-regional evaluation of new machine learning algorithms for mapping tree species distribution and abundance	UM	Legaard/Weiskittel	1	0	0	0	1	1	1	1	1	0	0
77	III	Remote sensing	20.8	Using hyperspectral imaging to evaluate forest health risk	PU	Couture/Jacobs	1	0	1	0	1	1	1	1	0	0	0
78	III	Management	20.81	Resilience of soil organic matter to harvesting: A global study of long-term soil productivity experiments	OSU	Hatten	1	1	0	0	1	1	1	0	0	0	0
79	III	Management	20.82	Stand response to thinning: Enhancing response prediction through modeling	UW	Turnblom and Cross	1	0	0	0	1	1	1	0	1	0	0
80	III	Growth Modeling	20.83	Using predictive analytics to decompose site index	UW	Cross and Turnblom	1	0	0	0	1	1	1	0	1	0	0
81	III	Management	20.84	Physiologic response to commercial fertilization programs in Pacific Northwest forest plantations	UW	Littke	1	1	1	0	1	1	1	0	0	0	0
82	III	Genetics	21.85	Variation in productivity, wood quality and soil carbon of nine conifer species across a gradient in water deficit	OSU	Gonzalez	1	0	0	0	0	1	1	0	1	0	0
83	III	Management	21.86	Stem form of nitrogen fertilized Douglas-fir trees	OSU	Mainwaring	1	0	0	0	0	1	1	0	1	0	0
84	III	Remote Sensing	21.87	Linking leaf area index and remote sensing across different forest types	NCSU	Trlica	1	1	1	0	1	1	1	0	0	0	0
85	III	Wood Quality	21.88	Quantifying silvicultural treatment effect on lumber quantity and quality in loblolly pine	UGA	Dahlen et al.	1	1	0	0	1	0	0	0	0	0	0
86	III	Management	21.89	Quantifying carbon sequestration as a function of silvicultural treatment in loblolly pine	UGA	Dahlen et al.	1	1	0	0	1	0	0	0	0	0	0
87	III	Remote Sensing	21.9	INTERN: Improving forest sample estimation through UAS canopy structure stratification	UI	Kimsey et al.	0	0	0	0	0	0	0	1	0	0	0
88	III	Management	21.91	NCSU START	NCSU	Cook et al.	0	1	0	0	0	0	0	0	0	0	0
89	III	Remote Sensing	21.92	UMaine START	UM	Weiskittel et al.	0	0	0	0	0	0	1	0	0	0	0
90	III	Growth Modeling	22.93	UMaine INTERN	UM	Weiskittel et al. /Smith	0	0	0	0	0	0	1	0	0	0	0
91	III	Management	22.94	NCSU INTERN	NCSU	Cook et al.	0	1	0	0	0	0	0	0	0	0	0
92	III	Remote Sensing	22.95	Uidaho INTERN	UI	Nelson/Ferson	0	0	0	0	0	0	0	1	0	0	0
93	III	Remote Sensing	22.96	Monroe Community College START	MCC	Little et al.	0	0	0	0	0	0	0	1	0	0	0
94	III	Remote Sensing	22.97	UIdaho INTERN	UI	Kimsey/Dougherty	0	0	0	0	0	0	0	1	0	0	0
95	III	Remote Sensing	22.98	Center for Advanced Forestry Systems Interactive Mapping Platform (CAFSIMP)	NCSU	Pala	1	1	1	0	0	0	1	1	0	0	0
96	III	Growth Modeling	22.99	The effects of dominant tree height definition on loblolly pine growth and yield model outputs	UGA	Bullock et al.	1	1	0	0	1	0	0	0	0	0	0
97	III	Management	23.1	Use of carbon isotopes for assessing tree response to thinning	UM	Mike Premer	1	1	0	0	0	0	1	1	1	0	0
98	III	Management	23.101	Site-stand dynamics and pine beetle mortality in ponderosa pine ecosystems	UI	Haley Anderson	1	1	0	0	0	0	0	1	0	0	0
99	III	Forest Health	23.102	Enhancing Resistance to Fungal Pathogens in Commercial Tree Seedlings	UI	Abby Ferson	0	0	0	0	0	0	0	1	0	0	0
100	III	Genetics	23.103	Determination of crown morphological traits using laser scanning in Douglas-fir and loblolly pine genetics trials	OSU	Doug Mainwaring	1	1	0	1	0	1	1	0	0	0	0
101	III	Remote Sensing	23.104	The Interplay between Sampling Design and Small Area Estimation to Improve Timberland Inventory	OSU	Temesgen Hailmeriam	1	1	0	1	0	1	1	0	0	0	0
102	III	Remote Sensing	24.105	Robust small-area estimation strategies for developing accurate stand-level diameter distributions	UI	Poolakkal et al.	1	0	0	1	1	1	1	1	0	0	0
103	III	Remote Sensing	24.106	Integrating SAE methods with stand-level forest inventory and growth projection for southern pine plantations	UGA	Yang et al.	1	0	0	1	1	1	1	0	0	0	0
104	III	Remote Sensing	24.107	Using Small Area Estimation and 3D-NAIP/Sentinel-derived Variables for Multivariate Prediction of Stand Attributes	OSU	Joo et al.	1	0	0	0	1	1	1	0	0	0	0
105	III	Management	24.108	The Effect of Silvicultural Treatment on Douglas-fir Stem Form	OSU	Mainwaring	1	0	0	0	0	1	1	1	0	0	0
106	III	Management	24.109	Throughfall reduction impacts on loblolly pine plantations pre- and post-thinning	UGA	Bullock	1	0	0	1	1	0	0	0	0	0	0