New industry and partnership with cross laminated timber.

My Background

- Resume
- International Paper
  - Wood Quality Project Leader
  - Chemometric Characterization
- Louisiana Pacific
  - New Product Development
  - Statistical Modeling
  - Development of cost effective and green adhesives
- Auburn
  - Combines these areas

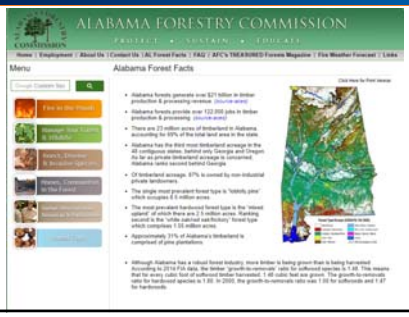
Dr. Maria Soledad Peresin Background

Dr. Maria Soledad Peresin
soledad.peresin@auburn.edu
School of Forestry and Wildlife Sciences, Auburn University

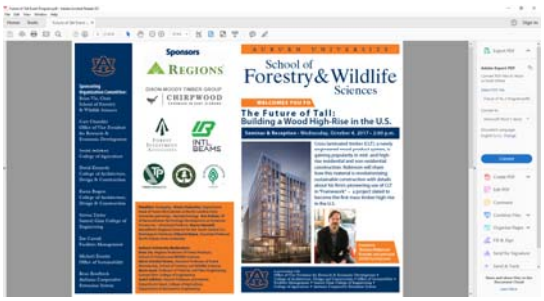
Vesa Kunnari, Panu Lahtinen, Tekla Tammelin
VTT Technical Research Centre of Finland

Orlando Rojas
Aalto University, Finland

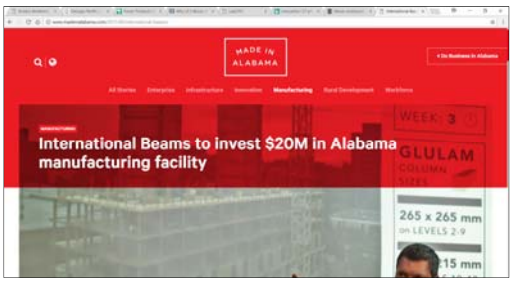
Relevance of Industry to Alabama



Blending Education and Research
Blending Industry and Academia



Auburn University is gearing up for CLT



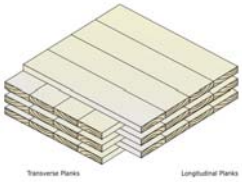
1/xx

Is CLT an Opportunity?

1/xx

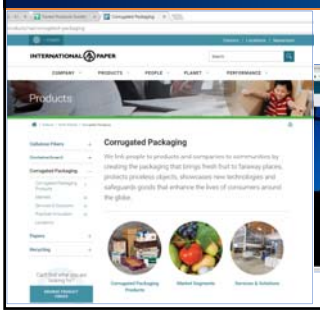
What is CLT?

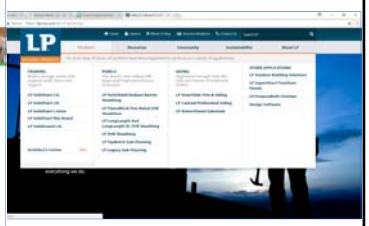
- https://youtu.be/jEmcJer3AUM



1/xx

Reminder of My Engineered Wood Background





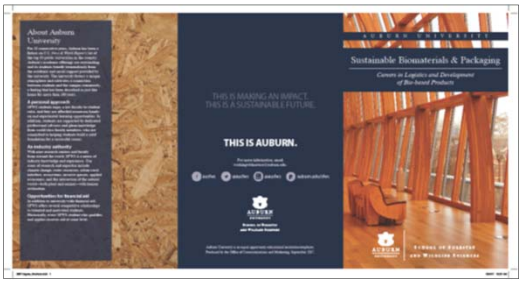
1/xx

More than CLT is at Stake

Video:
https://lpcorp.com/about-lp/why-lp/

1/xx

Auburn University is gearing up for CLT



1/xx

Auburn University is gearing up for CLT

1/xx

Thomas Robinson combats CLT misconception

https://www.cbsnews.com/video/wood-construction-catching-on-but-could-be-dangerous/

1/xx

Other capabilities

Auburn University Assistant Professor David Roueche analyzes damage after Hurricane Irma in Florida Roueche and fellow researchers are collecting data from more than 900 buildings after hurricanes in Texas and Florida to determine why some structures failed and others didn't.

1/xx

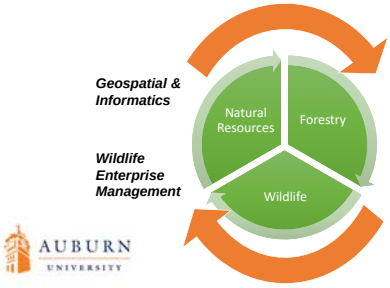
Other capabilities

1/xx

New Undergraduate Curriculum

Rationale for an undergraduate program

"Sustainable Biomaterials & Packaging"



Geospatial & Informatics

Wildlife Enterprise Management

Sustainable Biomaterials & Packaging

AUBURN UNIVERSITY

Rationale for an undergraduate program

Sustainable Biomaterials & Packaging <u>Themes</u>

Biomass & Logistics	Processes & Products	Sustainability & Business
• Planting (Seedling) • Feedstock Quality • Harvesting, Transportation • Supply Chain Management • Distribution & Logistics	• Traditional Forest Products • Forestry Materials Packaging • CLT, Wood Composites • BioBased Polymers for Packaging • Bioenergy • Pulp & Paper for Packaging • QC Control & Testing	• Marketing & Business • LCA • Eco-Design • Economics • Product Development • Recycling

AUBURN UNIVERSITY

Rationale for an undergraduate program

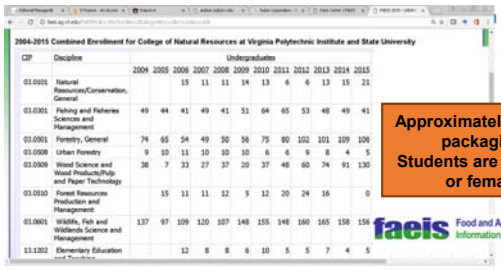
Interdisciplinary Team

- SFWS
- Chemical Engineering (College of Eng.)
- Biosystems Engineering (College of Ag.)
- College of Architecture. Design, & Construction
- Raymond J. Harbert College of Business

AUBURN UNIVERSITY

Rationale for an undergraduate program

Case: Sustainable Biomaterials & Packaging: VT Enrollment



2004-2015 Combined Enrollment for College of Natural Resources at Virginia Polytechnic Institute and State University

CIP	Discipline	Undergraduates											
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
03.0101	Natural Resources/Conservation, General			15	11	11	14	13	6	6	13	15	21
03.0301	Fishing and Fisheries Sciences and Management	49	44	41	49	41	51	64	65	53	48	49	41
03.0501	Forestry, General	74	65	54	49	50	56	75	90	102	101	109	106
03.0508	Urban Forestry	9	10	11	10	10	10	6	6	9	8	4	5
03.0509	Wood Science and Wood Products/Pulp and Paper Technology	38	7	33	27	37	20	37	48	60	74	91	130
03.0510	Forest Resources Production and Management		15	11	11	12	5	12	20	24	16		0
03.0601	Wildlife, Fish and Wildlands Science and Management	137	97	109	120	107	148	155	148	160	165	158	156
13.1202	Elementary Education			12	8	8	6	10	5	5	7	4	5

Approximately 30% of packaging Students are minority or female

faeis Food and Agricultural Education Information System

Rationale for an undergraduate program

Where is Industry Headed?

AUBURN UNIVERSITY

Rationale for an undergraduate program

Sustainable Biomaterials & Packaging <u>Equipment</u>

Dynamic Mechanical Analysis (Strength testing of polymer at Various temperatures)

Thermo-mechanical analysis

Donation of Used Thermal Analysis Equipment

Sustainable Biomaterials & Packaging <u>Equipment</u>

Thermal Gravimetric Analysis (TGA)

TGA + Infra Red Spectrometer

Differential Scanning Calorimeter (DSC)

Thermo-mechanical analysis

Conclusions

- *Cross Laminated Timber is the new industry in town.*
- *New Undergraduate Curriculum has 12 students!*
- *This program is sustainable with 17 trees grown for every 10 harvested.*