

# 71st FPS International Convention Program

*(subject to change)*

## Sunday, June 25th

8:30 am - 3:00 pm FPS Board Meeting

10:30 am - 3:00 pm - Student Excursion to Dorman Lake Lodge (optional)

3:30 - 5:00 pm Wood Bowl

5:00 - 7:00 pm Welcome Reception

## Monday, June 26th

8:00 am - 10:00 am

Plenary Session I

Introduction and Welcome

*Dr. Rubin Shmulsky, Sustainable Bioproducts Department Head, Mississippi State University*

Building a Greenfield OSB Production Facility

*Roy O. Martin, President, CEO & CFO, Roy O. Martin*

Establishing a Culture of Innovation Excellence for the Future Bioeconomy

*Trevor Raymond Stuthridge, Executive V-P, FP Innovations*

10:00 am - 10:30 am Break

10:30 am - 12:00 pm

**1.1 Forest Products Education and Strategic Development**

Session Chair: **Richard Vlosky**, *Louisiana Forest Products Development Center*

Co-Session Chair: **Byung-Dae Park**, *Kyungpook National University*

**1.1.1** Successes and Failures in Restructuring Forest Products Programs to Enhance Their Appeal to Undergraduate Students

**Barry Goodell**, *University of Massachusetts*

**1.1.2** The UBC Wood Products Processing Program – Past, Present and Future

**Simon Ellis**, *University of British Columbia*

**1.1.3** Chinese Forest Products Education

**Xiaojian Zhou**, *Southwest Forestry University*

**2.1 Forest Products Marketing**

Session Chair: **Changyou Sun**, *Mississippi State University*

**2.1.1** Stock Market Responses to Antidumping and Countervailing Duties on Forest Products Imports in the United States

**Changyou Sun**, *Mississippi State University*

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- 2.1.2** A Mid-Recession and Post-Recession Comparison of Chain-of-Custody Certification in the U.S. Value-Added Wood Product Manufacturing Sector

**Cagatay Tasdemir**, *Louisiana Forest Products Center*

- 2.1.3** Survey Response Rates in the Forest Products: What is the Norm?

**Iris Montague**, *US Forest Service*

- 2.1.4** Strategy-Sustainability Interface in the US Pulp and Paper Industry

**Jennifer DeBoer**, *University of British Columbia*

## **3.1 Wood Quality and Management**

Session Chair: **Joseph Dahlen**, *University of Georgia*

- 3.1.1** Loblolly Pine Logs Can be Segregated Using Acoustics for Lumber Modulus of Elasticity, Not for Modulus of Rupture

**Joseph Dahlen**, *University of Georgia*

- 3.1.2** Screening Elite Loblolly Pine Families for Structural Integrity with Near Infrared-Based Chemometric Models

**Gifty Acquah**, *Auburn University*

- 3.1.3** Variability in Southern Pine Wood Quality Data Determined by X-ray Densitometry: Considerations Related to Species, Tree Age, and Technique

**Thomas Eberhardt**, *USDA Forest Service*

- 3.1.4** Multivariate Modeling of Acousto-mechanical Response of Fourteen Year Old Loblolly Pine (*Pinus taeda*) to Variation in Wood Chemistry, Microfibril Angle and Density

**Charles Essien**, *Auburn University*

**12:30 pm - 1:30 pm Student Luncheon**

**1:30 pm - 3:00 pm**

## **1.2 Workforce Development and Reshoring**

Session Chair: **Bill Martin**, *Franklin Furniture Institute, Mississippi State University*

- 1.2.1** The Mississippi Furniture Industry

**Bill Martin**, *Franklin Furniture Institute, Mississippi State University*

- 1.2.2** Reshoring and Its Impact on Transportation Infrastructure

**Chad Miller**, *Economic Development, Tourism, and Sports Management*

- 1.2.3** Workforce Development in Mississippi

**Bill Renick**, *Workforce Development*

- 1.2.4** Current Health of the Logging Sector in the U.S. South

**Richard Vlosky**, *Louisiana Forest Products Development Center*

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## 2.2 Lumber Research and Harvesting

Session Chair: **Grace Laurie**, *Mississippi State University*

Session Co-Chair: **Tessie Tong**, *FPIInnovations*

**2.2.1** Wood Quality Evaluation of Mangium (*Acacia mangium* Willd) at 4-, 6-, and 8-year-old (Philippine Sites)

**Marina Alipon**, *Dept. of Science and Technology, Forest Products Research and Development Institute*

**2.2.2** Effects of Knots on Longitudinal Shear Strength of Southern Pine

**Yawei Cao**, *Mississippi State University*

**2.2.3** Physical-Mechanical Properties of Lesser Used Wood Species in Nigeria

**Lawrence Aguda**, *Forestry Research Institute of Nigeria*

**2.2.4** Lumber Bending Properties and MSR Yield of Black Spruce in Relation to Growth, Wood Characteristics, Visual Grades and Drying Treatments

**Xu Youming**, *Huazhong Agricultural University*

## 3.2 Bioenergy and Biorefining

Session Chair: **Jason Street**, *Mississippi State University*

Session Co-Chair: **Qi Li**, *College of Forestry, Shandong Agricultural University*

**3.2.1** Hardwood Tree Quality and Value Impacts of Prescribed and Wildland Fire: A Review of Existing Knowledge

**Jan Wiedenbeck**, *USDA Forest Service, Northern Research Station*

**3.2.2** Synthesis and Characterization of Bio-oil-based Self-curing Epoxy Resin

**Yusuf Celikbag**, *Auburn University*

**3.2.3** Effect of Biomass Chemical Composition on Bio-oil Production from Fast Pyrolysis

**Qi Li**, *College of Forestry, Shandong Agricultural University*

**3.2.4** Themally Modified Engineered Wood Products Durability

**Mike Barnes**, *Mississippi State University*

**3:00 pm 3:30 pm Break**

**3:30 pm - 5:00 pm**

### 4 Student Poster Presentation

Session Chair: **Frank Owens**,

Session Co-Chair: **Cody Blake**,

**3:30-5:00 pm - MSU Department of Sustainable Bioproducts Tour**

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5:00 pm - 7:00 pm

## Poster Session

Session Chair: **Dr. Iris Montague**, *USDA Forest Service*

- 1 Overview of the Forest Sector in Kenya  
**Gilbert Ototo**, *Louisiana Forest Products Center*
- 2 Wood protection by  $\beta$ -cyclodextrin complexes  
**Lili Cai**, *Mississippi State university*
- 3 Nano-chitosan wood treatment  
**Laya KhademiBami**, *Mississippi State University*
- 4 Differences in physical-mechanical properties of bamboo scrimbers with response to bamboo maturing process  
**Xingyan Huang**, *Louisiana State University*
- 5 Probable Zones of Destruction of Glued Laminated Timber in Bending  
**Ainur Otarbayeva**, *L.N.Gumilyov Eurasian National University*
- 6 Sustainable Development – International Framework – Overview and Analysis in the Context of Forests and Forest Products – Green Business  
**Annika Hyytiä**, *University of Helsinki*
- 7 Effect of extrusion cycles and coupling agent on the properties of wood fiber/PP composites  
**Birm-June Kim**, *Kookmin University*
- 8 Modelling Wood Gluelam For New Cross Laminated Timber Development  
**Guangmei Cao**, *Mississippi State University (Sustainable Bioproducts)*
- 9 Integrated Log Grading/Scanning  
**David DeVallance**, *West Virginia University*
- 10 Improving Biomass Pellet Properties Using Agricultural Waste as Additives  
**Phong Ly**, *Mississippi State University Department of Sustainable Bioproducts*
- 11 Environmental impacts of producing wood pallets in the United States  
**Richard Bergman**, *USDA FS FPL*
- 12 Nanocomposite from Modified Cellulose Nanocrystals (CNCs) and Polylactic Acid (PLA) for Packaging Films  
**Nicole Stark**, *USDA FS, Forest Products Laboratory*
- 13 Termiticide Efficacy Testing for Candidate Termiticides by the USDA Forest Service  
**Thomas G. Shelton**, *Forest Products Laboratory*
- 14 Wood Cell Wall-Derived Carbon with Nano-channels for Next Generation Electrochemical Energy Storage Devices  
**Xinfeng Xie**, *Michigan Technological University*
- 15 Effect of chitosan on the protist hindgut community in *Reticulitermes virginicus*  
**Telma Telmadarrehei**, *Mississippi State University*

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16 Developing a method for direct DNA analysis of protists from termite hindgut

**Juliet Tang**, *USDA Forest Service, Forest Products Laboratory*

7:00 pm - 10:00 pm Starkville Pub Crawl (Students)

**Tuesday, June 27**

8:00 am - 10:00 am

**Plenary Session II**

Session Chair: **Richard Vlosky**, *Louisiana Forest Products Development Center*

**Reinventing and Reshoring Forest Products Manufacturing in America**

**Will Hill**, *Mayor of Louisville, Winston County, Mississippi*

**Experiences with Development of International Markets for Industrial Products**

**Ms. Pat Thomasson**, *CEO, Thomasson Company*

**The International Supply Chain for Wood Pellets**

**Richard Peberdy**, *Vice President, Sustainability for Drax Biomass, Inc, USA*

10:00 am - 10:30 am Break

10:30 am - 12:00 pm

**1.3 Furniture Research and Related Topics**

Session Chair: **Jilei Zhang**, *Mississippi State University*

**1.3.1** Application of Vertical Force During the Process of Screw Driving Torques in Particleboard  
**Onder Tor**, *Kastamonu University*

**1.3.2** Effects of Test Indenter Size When Determining Load-Deflection Behavior of Cushions for Upholstery Furniture  
**Lingling Hu**, *Department of Industrial Design, Zhejiang A&F University, Hangzhou, China*

**1.3.3** Behavior of Wood Beam Connection Using Staples Subjected to In-Plane Moment  
**Bambang Suryoatmono**, *Parahyangan Catholic University*

**1.3.4** Fatigue Performances of Natural and Plastic Synthetic Rattan Weaving Strips Used for Rattan Furniture  
**Yanting Gu**, *Nanjing Forestry University*

**2.3 Adhesive Research**

Session Chair: **Mao An**, *College of Forestry, Shandong Agricultural University*

Co-Session Chair: **Mark Clark**, *Hexion*

**2.3.1** Sequential Addition of Soy Flour to Blender for Oriented Strand Board Production  
**Brian Via**, *Auburn University Forest Products Development Center*

**2.3.2** Development of DF Resins and DUF and DMF Copolymer Resins  
**Moon Kim**, *Mississippi State University*

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**2.3.3** Influence of Synthesis Methods to Molecular Weights of Melamine-Urea-Formaldehyde Resins and Performance of Medium Density Fiberboards  
**Byung-Dae Park**, *Kyungpook National University*

**2.3.4** Identification and analysis of key odor compounds from alkyd resin enamel coating boards by Gas Chromatography–Mass Spectroscopy Olfactometry  
**Wang Qifan**, *Northeast Forestry University*

## **3.3 Wood Tall Building Design**

Session Chair: **Jacob Gines**, *Mississippi State University*

**3.3.1** Fire Safety for High Rise Timber Buildings - Challenges and Solutions  
**David Barber**, *Arup*

**3.3.2** Tall Wood Buildings in the US – A Codes and Standards Update  
**Lori Koch, PE**, *American Wood Council*

**3.3.3** Evaluation on Hygrothermal Performance of Korean Wood-frame Structures using WUFI 2D Simulation Program  
**Seong Jin Chang**, *Soongsil University*

**3.3.4** Speculations for Mass Timber in Mississippi  
**Jacob Gines**, *Mississippi State University*

**12:00 pm - 1:30 pm Awards Luncheon & Business Meeting**

**1:30:00 pm - 3:00 pm**

## **1.4 Wood Chemicals and Biomaterials**

Session Chair: **El Barbary Hassan**, *Mississippi State University*

Session Co-Chair: **Tanneru Sathish**, *Mississippi State University*

**1.4.1** Preparation and Application of Chitin/TEMPO-Oxidized Cellulose Nanofibers Based Hydrogels for Heavy Metals Removal  
**El Barbary Hassan**, *Mississippi State University*

**1.4.2** What are the Ranges and Basis of Auxeticity in the Phases of Cellulose Microfibrils?  
**Akwasi Asamoah**, *University of Exeter*

**1.4.3** Activated Carbon from Bioenergy Crops for Adsorption of Pharmaceutical Compounds  
**Oluwatosin Oginni**, *West Virginia University*

**1.4.4** Cellulose Nanofiber for Advanced Functional Materials  
**Yan Qiang**, *Central Southern University of Forestry and Technology*

## **2.4 Nanomaterial Development and Testing**

Session Chair: **Nicole Stark**, *USDA FS, Forest Products Laboratory*

Session Co-Chair: **Yujie Meng**, *Nanomechanics, Inc.*

**2.4.1** Effects of Carbonaceous Materials on Properties and Weatherability of Wood Flour/Polypropylene Composites  
**Yao Peng**, *Beijing Forestry University*

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- 2.4.2** Dyed Cellulose Nanofibril Coating as Paint  
**Vesa Kunnari**, *VTT Technical Research Centre of Finland*
- 2.4.3** Residual Lignin and Its Effect on the Properties Cellulose Nanofibrils Suspensions and Nanopapers  
  
**Maria Soledad Peresin**, *Auburn University*
- 2.4.4** Mapping the Mechanical Properties of Biopolymer Composite using Advanced Instrumented Indentation  
**Yujie Meng**, *Nanomechanics, Inc.*

## 3.4 CLT Research

Session Chair: **Daniel Hindman**, *Virginia Tech*

- 3.4.1** Utilization of Low-value Lumber from Small-diameter Logs Harvested in Pacific Northwest Forest Restoration Programs in Hybrid Cross Laminated Timber (CLT) Core Layers  
**Christina Lawrence**, *Oregon State University*
- 3.4.2** Lateral and Withdrawal Capacity of One Screw Type on Hybrid Cross Laminated Timber Panels Application  
**Vahid Mahdavi**, *Oregon State University*
- 3.4.3** Cross Laminated Timbers Produced with Low Grade Appalachian Hardwoods  
**Rafael Azambuja**, *West Virginia University*
- 3.4.4** Experimental Investigation of Lateral Load Behavior of Post-Tensioned Rocking CLT Walls  
**Sriram Aaleti**, *University of Alabama*

**3:00 pm - 3:30 pm Break**

**3:30 pm - 5:00 pm**

## 1.5 New Bioproducts Development

Session Chair: **Xiaolin Cai**, *FPIInnovations*

Session Co-Chair: **Zhongqi He**, *USDA-ARS*

- 1.5.1** Effects of the Particle Size on the Adhesive Strength of Washed Cottonseed Meal with White Oak  
**Zhongqi He**, *USDA-ARS*
- 1.5.2** A Formula for Time Valuing CO2 Emissions from Buildings  
**Howard Darby**, *Peter Brett Associates*
- 1.5.3** Preparation and Properties of Protein Adhesives Derived from Cottonseed Meal for Plywood  
**An Mao**, *College of Forestry, Shandong Agricultural University*
- 1.5.4** Cellulose Filaments Foamed Materials  
**Xiaolin Cai**, *FPIInnovations*

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## 2.5 Wood Protection

Session Chair: **Futong Cui**, *Fire Retardant Chemical Technologies*

Session Co-Chair: **Kevin Archer**, *Viance*

- 2.5.1 Copper and Boron Leaching from Copper Boron Azole Treated Poles into Soil  
**Dragica Jeremic**, *Sustainable Bioproduct, Mississippi State Univ*
- 2.5.2 Long Term Durability of ACA and CCA Treated Solid Lumber and Plywood Composed of Refractory Wood Species  
**Mark Mankowski**, *USDA Forest Products Laboratory*
- 2.5.3 Fire Retardants for Wood Products – A Review  
**Futong Cui**, *Fire Retardant Chemical Technologies*
- 2.5.4 Promotion Effect on Flame Resistance and Smoke Suppression of Nitrogen-Phosphorus Flame Retardants by Melamine/Mg (OH) 2 Additive  
**Jun Mu**, *Beijing Forestry University*

## 3.5 Green Building

Session Chair: **Pierre Blanchet**, *Université Laval*

Session Co-Chair: **Bonnie Yang**, *BlueLinx Corporation*

- 3.5.1 Mid-Rise Wood Frame Construction: A Good Idea or Are We Asking for Trouble?  
**Derek Hodgin**, *Construction Science and Engineering, Inc.*
- 3.5.2 Just how “green” are timber buildings? Assessing the climate change mitigation potential of a mid-rise timber building through dynamic life cycle assessment.  
**Charles Breton**, *Université Laval*
- 3.5.3 Evaluation on Hygrothermal Performance of Korean Wood-frame Structures using WUFI 2D Simulation Program  
**Seong Jin Chang**, *Soongsil University*
- 3.5.4 Environmental, Economic and Social Impacts Assessment on CLT Buildings in North America  
**Hongmei Gu**, *USDA Forest Products Laboratory*

6:30 pm - 10:00 pm Paul Bunyan Reception

## Wednesday, June 28

8:00 am - 10:00 am

### Plenary Session III

Session Chair: **David DeVallance**, *West Virginia University*

### Bioeconomy- An Exciting Future for Forest Products

**World Nieh**, *USDA FS National Program Leader for Forest Products and Utilization*

### The Growth of the Global Veneer Based Plywood and Engineered Lumber Industry

**Richard (Dick) Baldwin**, *Managing Partner, Oak Creek Investments LLC*

### Development of Cellulose Nanofiber and Nanocomposite in China



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**Dr. Yiqiang Wu**, *Vice President of Central South University of Forestry and Technology, China*

## Declaration of Interdependence

**Dr. Steve Bullard**, *Provost and Vice President of Academic Affairs, Stephen F. Austin State University*

10:00 am - 10:30 am Break

10:30 am - 12:00 pm

### 1.6 Environment

Session Chair: **Beth Stokes**, *Mississippi State University*

Session Co-Chair: **Hamid Borazjani**, *Mississippi State University*

#### 1.6.1 Remediation of Pentachlorophenol in Contaminated Soil

**Hamid Borazjani**, *Mississippi State University*

#### 1.6.2 Bacterial Degradation of Pentachlorophenol Within In-situ Remediated Groundwater

**Beth Stokes**, *Mississippi State University*

#### 1.6.3 Zero Fuel Operation – Wood Plant Air Emission Control RTO/RCO

**Rodney Pennington**, *PE, NESTEC Inc.*

#### 1.6.4 Novel Wood Protection Technologies and Environmental Awareness

**Marshall White**, *Virginia Tech*

### 2.6 Structural Panel Research

Session Chair: **Hyungsuk Thomas Lim**, *Mississippi State University*

Session Co-Chair: **Pascal Theberge**, *J.M. Huber Corporation*

#### 2.6.1 R&D to Address Regulations Impacting the Structural Panel Industry

**Steve Zylkowski**, *APA*

#### 2.6.2 Effect of Material Choices on Building Life Cycle Environmental Impacts: Critical Assessment of LEED v4 Certification

**Ben Amor**, *University of Sherbrooke*

#### 2.6.3 Alternative Sheathing Approach to Meeting New Energy Code Requirements

**Jianhua Pu**, *Huber Engineered Woods*

#### 2.6.4 Comparison of Beam Application on Stick Built Roof: Engineered Lumber versus Solid Sawn Lumber

**Bonnie Yang**, *BlueLinx Corporation*

### 3.6 Composite Products Research

Session Chair: **Dennis Tally**, *Roseburg*

Session Co-Chair: **YiQiang Wu**, *Central Southern University of Forestry and Technology*

#### 3.6.1 Preparation and Photocatalytic Properties of Visible-light Responded Metal-doped TiO<sub>2</sub> on Carbonized Board

**Min Lee**, *National Institute of Forest Science*

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**3.6.2** The Effect of Feedstock Type and Particle Size on the Electrical Conductivity and Piezoresistive Behavior of Polyvinyl Alcohol/Biochar Composite Films  
**David DeVallance**, *West Virginia University*

**3.6.3** Soy Protein Substitution in Phenol Formaldehyde Adhesive used in Oriented Strand Board  
**William Hand**, *Auburn University*

**3.6.4** Physico-mechanical Properties and Drying Behavior of Hydrothermally Treated Yellow-poplar  
**Sohrab Rahimi**, *West Virginia University*

**12:00 pm - 1:30 pm Lunch on Your Own**

**12:30 pm - 6:00 pm**

**Biewer Lumber Sawmill Tour or Winston Plywood Tour (optional)**