



JUNE
15-20
2025

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**Fort Collins,
Colorado, USA**

**SOCIETY OF
WOOD SCIENCE &
TECHNOLOGY**



**Wood for a Sustainable Future: Strengthening the
Connection Between Industry and Science**





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Fort Collins,
Colorado, USA

SOCIETY OF
WOOD SCIENCE &
TECHNOLOGY

WELCOME

Warmest welcomes to everyone attending the FPS SWST Joint Convention here in Fort Collins, Colorado, USA. I appreciate everyone's time and effort to be here and make the Convention a success. With a great mixture of attendees from academia, industry, and government, I am confident this Convention will achieve its aim to strengthen the connection between industry and science, which will accelerate the advancement of wood and forest products in improving the lives of people around the world. Following keynote speakers Pete Madden and Giacomo Goli on Monday morning, there is a four-day technical program with over 200 presentations given by experts from around the world. A special thank you to all the Technical Session Organizers who assembled sessions covering a wide range of exciting topics from business and marketing practices to education to mass timber. Everyone is encouraged to engage with the presenters and panel discussions during the technical sessions. I hope you also take advantage of the breakfasts, lunches, coffee breaks, and evening receptions to expand your networks and foster new connections. I know that many of my most productive collaborations have arisen from connections made at conferences like the FPS-SWST Joint Convention. Everyone coming away from the Convention with new connections is ultimately what will make the event a success. Please enjoy the FPS-SWST Joint Convention and I look forward to connecting with you this week!



Joseph Jakes

Forest Products Society Vice President

**USDA FS Forest Products Laboratory
(Co-Chair)**



TO THE 2025 JOINT CONVENTION

My doctoral thesis was focused on the development of a new wood-based composite. I carried out the research in collaboration with the plywood industry, and I recall well how I needed to learn both the academic and the industrial perspectives. We often say that wood lends itself to an interdisciplinary approach, but interactions within its world are all the same key. In our field, industry and science speak the same amazing language—that of wood—but with different accents that come from different points of view. Balancing them is not always easy and requires skill and effort, but the rewards can be great. I confess that even today, during my annual lecture on innovative products, I show “my” composite and proudly mention that it made it to the market. The 2025 FPS-SWST Joint Convention aims at strengthening the connection between the wood industry and science. Special attention is given to building a sustainable future, a challenge of utmost importance and to which wood has a great deal to offer. Seeing the number and quality of the contributions, the variety of topics covered, the global provenance of attendees, and how industry and science are represented, I believe the convention will fully achieve its goal. So, my warmest thanks go to Joseph Jakes, Angela Haney and Jessica Johnson for their great dedication in organizing this event, to the sponsors who supported it, and to all the participants who will fill the halls and present so much interesting content. I hope you enjoy the Convention!



Francesco Negro

Society of Wood Science and Technology President

***DISAFA, University of Torino, Italy
(Co-Chair)***

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MONDAY, JUNE 16



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SOCIETY OF
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7:30 - 8:30 AM | CONTINENTAL BREAKFAST

7:30 AM - 3:30 PM | REGISTRATION

8:30 - 10:00 AM | KEYNOTE Salon A-D

- **Innovation Pathways for the Solid Wood Transformation Chain**, Giacomo Goli, Professor of Wood Technology, University of Florence (Italy)
- **Shaping the Future of Forest Products—One Small Organization Works to Revitalize Forest Products**, Pete Madden, President & CEO, U.S. Endowment for Forestry and Communities

10:00 - 10:30 AM | NETWORKING BREAK AMONG EXHIBITS

10:30 AM - 12:00 PM | CONCURRENT SESSIONS *denotes student

Session 1.1 Salon A-D - 21st Century Forest Sector Business & Marketing Practices I

~ Session Organizer - Eric Hansen (Oregon State University)

~ Moderator - Joona Mullarniemi

- ***Bridging Links of Transformational Wooden Business and Innovation Ecosystems by Encouraging New Actors*** - Md Rayhanur Rahman (University of Helsinki)
- ***European Woodworking Sector Outlooks and Main Barriers Against Further Digitalization Development in Small and Medium-sized Enterprises*** - Jaan Kers (Tallinn University of Technology), Loretta Kalju (Tallinn University of Technology), Alar Just (Tallinn University of Technology), Alar Kuusik (Tallinn University of Technology), Oliver Jancke (InnovaWood asb)
- ***Scaling-Up Science-based Forest Sector Innovation*** - Judith Gisip (Universiti Teknologi MARA), Lyndall Bull (FAO), Jigchen Norbu (FAO)
- ***Heterogeneity in Stakeholder Expectations on Ecological Responsibility of Finnish Forest Industry*** - Maria Nyström* (University of Helsinki), Eric Hansen (Oregon State University), Hannes Pasanen (University of Eastern Finland), Anne Toppinen (University of Helsinki)

Session 1.2 Salon E - Monitoring, Maintenance and Protection: Increasing the Durability of Wood to Face the New Environmental Challenges I

~ Session Organizers - Upamanyu Ray (Warner Babcock Institute for Green Chemistry), Qiongyu Chen (University of Maryland College Park), Jan Vcelak (Czech Technical University in Prague)

~ Moderators - Upamanyu Ray and Qiongyu Chen

- ***Structural Health Assessment and Monitoring of Timber Buildings: From Data to Decisions*** - Mariapaola Riggio (Oregon State University)
 - ***Anatomical, Chemical and Decay Resistance Properties of Silicone Oil Modified Fast-growing *Pinus massoniana* (L), Wood against Wood-decay Fungi*** - Kufre Okon (University of Uyo)
 - ***Multi-Scale Models for Capturing & Mitigating Fungal Effects on Wood Structures*** - Garrett Tatum (University of Wyoming), Natassia Brenkus (The Ohio State University)
 - ***In-Situ Polymerization of Cardanol Glycidyl Ether and Maleic Anhydride for Enhanced Wood Protection: Bio-Durability and Combustion Properties*** - Liang Liang* (University of Idaho), Aynun Nishat Farhabi (University of Idaho), Dylan Willard (University of Idaho), Armando McDonald (University of Idaho), Lili Cai (University of Idaho)
-



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- ***Bio-oils as Coatings for Mitigating Deterioration of Wood from Artificial Weathering*** - Dylan Willard* (University of Idaho), Armando McDonald (University of Idaho), Lili Cai (University of Idaho)

12:00 - 1:30 PM | LUNCH AND WOOD SCIENCE BOWL

1:30 - 3:00 PM | CONCURRENT SESSIONS *denotes student

Session 2.1 Salon A-D - 21st Century Forest Sector Business & Marketing Practices II

~ Session Organizer - Eric Hansen (Oregon State University)

~ Moderator - Maria Nystrom

- ***Cross-laminated Timber in the U.S. South: Changes in Sector Influencer and Sawmill Engagement Over the Past 5 Years*** - Richard Vlosky (Louisiana State University Agricultural Center)
- ***Global Mass Timber Industry and the Promise of New Jobs*** - Lech Muszynski (Oregon State University)
- ***From Hesitation to Innovation: De-Risking the Mass Timber Value Chain*** - Alice Palmer (Independent Consultant), Zara Rabinovitch (British Columbia Council of Forest Industries), Ian McAuliffe (British Columbia Council of Forest Industries)
- ***Communication about Sustainable Construction – Stakeholder Engagement*** - Lea Primožic* (InnoRenew CoE), Andreja Kutnar (InnoRenew CoE)

Session 2.2 Salon E - Monitoring, Maintenance and Protection: Increasing the Durability of Wood to Face the New Environmental Challenges II

~ Session Organizers - Upamanyu Ray (Warner Babcock Institute for Green Chemistry), Qiongyu Chen (University of Maryland College Park), Jan Vcelak (Czech Technical University in Prague)

~ Moderators - Upamanyu Ray and Qiongyu Chen

- ***Preliminary Experiment on Grafting of Phytic Acid on Wood and its Effect on Fungal Resistance and Thermal Stability*** - Aynun Nishat Farhabi* (University of Idaho), Lili Cai (University of Idaho)
- ***The Effect of Guayule Resin as a Natural Wood Preservative on Termite Resistance*** - Abigael Laisa* (Mississippi State University), Laya KhademiBami (Mississippi State University), Elizabeth Stokes (Mississippi State University), Rubin Shmulsky (Mississippi State University)

- ***Using Pre-Treatment Methods to Increase the Accessibility of the Cellulosic Layer of Softwood for Improved Nanoparticle Impregnation*** - Callisto Beuthe* (University of Ottawa), M.Reza Foruzanmehr (University of Ottawa)
- ***Enhancing Wood's Fire and Fungal Resistance: Laccase-Mediated Grafting of Lignin Nanoparticles (LNP)*** - Jovale Vincent Tongco* (University of Idaho), Aynun Nishat Farhabi (University of Idaho), Lili Cai (University of Idaho)
- ***Oriented Strand Board Treated with Beta-cyclodextrin trans-cinnamaldehyde and thymol*** - Jason Street (Mississippi State University), Ethan Turo (Mississippi State University), Hamed Olayiwola (Mississippi State University), Yunsang Kim (Mississippi State University)



3:00 - 3:30 PM | BREAK AND EXHIBITS

3:30 - 5:00 PM | CONCURRENT SESSIONS *denotes student

Session 3.1 Salon A-D - 21st Century Forest Sector Business & Marketing Practices III

~ Session Organizer - Eric Hansen (Oregon State University)

~ Moderator - Lea Primožic

- ***The Role of Policy Environment and Markets in the Context of Finnish Circular Forest Bioeconomy*** - Joona Myllarniemi* (University of Helsinki), Anne Toppinen (University of Helsinki), Anni Tuppurä (Lappeenranta-Lahti University of Technology), Alice Ludvig (BOKU University), Nina Ehrnrooth (University of Helsinki)
- ***Marketing Hardwoods to a Disconnected Consumer and Ignorant Designers*** - Dallin Brooks (National Hardwood Lumber Association)
- ***Croatian wood-based industry and its markets: Past, Present, and Future*** - Andreja Pirc Barcic (University of Zagreb)
- ***Navigating Timber Sales in Public Land Management*** - Jaana Korhonen (Oak Ridge Institute of Science and Education), Gregory Frey (USDA FS Southern Research Station), Sonia Bruck (USDA FS Southern Research Station)
- ***Standardization of forest product carbon accounting*** - Adam Taylor (University of Tennessee), Hongmei Gu (USDA FS Forest Products Laboratory)

Session 3.2 Salon E - Advanced Characterization in Forest Products Research I

~ Session Organizers - Nayomi Plaza (USDA FS Forest Products Laboratory), Laura Hasburgh (USDA FS Forest Products Laboratory), Katie Ohno (USDA FS Forest Products Laboratory), Nathan Bechle (USDA FS Forest Products Laboratory)

~ Moderators - Nayomi Plaza and Oswaldo Erazo

- ***Roots, Shoots, and Leaves: How Novel Methods and Apparatus Are Applied for Comprehensive Spatial Multiomics at Various Scales and Timepoints*** - Kevin Zemaitis (Pacific Northwest National Laboratory)
- ***Structural Characterization of Plant Tissues using Scanning X-ray Scattering Tomography*** - Lin Yang (Brookhaven National Laboratory)
- ***Enhancing Hygrothermal Performance of Wood Fiber Insulation using Microencapsulated Phase Change Materials*** - Jihee Nam* (Yonsei University), Ji Yong Choi (Yonsei University), Hyeonseong Yuk (Yonsei University), Sumin Kim (Yonsei University)



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- FIBERS
- BOARD PLANTS
- SEED HULLS
- COMPOSITE & MOLDED
- PRODUCT ENGINEERING
- KEYBOARD SHUTDOWN &
- PLANNING
- EQUIPMENT COMMISSIONING

- ***Moisture-dependent Transverse Isotropic Elastic Constants of Wood S2 Secondary Cell Wall Layers Determined using Nanoindentation*** - Joseph Jakes (USDA FS Forest Products Laboratory), Xavier Arzola (University of Wisconsin Madison), Nayomi Plaza (USDA FS Forest Products Laboratory), Nathan Bechle (USDA FS Forest Products Laboratory), Yikai Wang (University of Wisconsin Madison), Don Stone (University of Wisconsin Madison), Rod Lakes (University of Wisconsin Madison)
- ***Tracking the Structural Evolution of Cellulose Nanocrystal Suspensions via Small Angle Light Scattering*** - Nayomi Plaza (USDA FS Forest Products Laboratory), Carl Houtman (USDA FS Forest Products Laboratory), Oswaldo Erazo (USDA FS Forest Products Laboratory), Ronald Sabo (USDA FS Forest Products Laboratory)
- ***Eco-Friendly Fire Resistance in MDF: Enhancing Fire Safety and Sustainability with Biochar and Expandable Graphite*** - Ji Yong Choi* (Yonsei University), Jihee Nam (Yonsei University), Yongjun Choi (Yonsei University), Sumin Kim (Yonsei University)

TUESDAY, JUNE 17

7:30 - 8:30 AM | CONTINENTAL BREAKFAST

7:30 AM - 3:30 PM | REGISTRATION

8:30 - 10:00 AM | EARLY STAGE RESEARCHER THREE-MINUTE TALKS

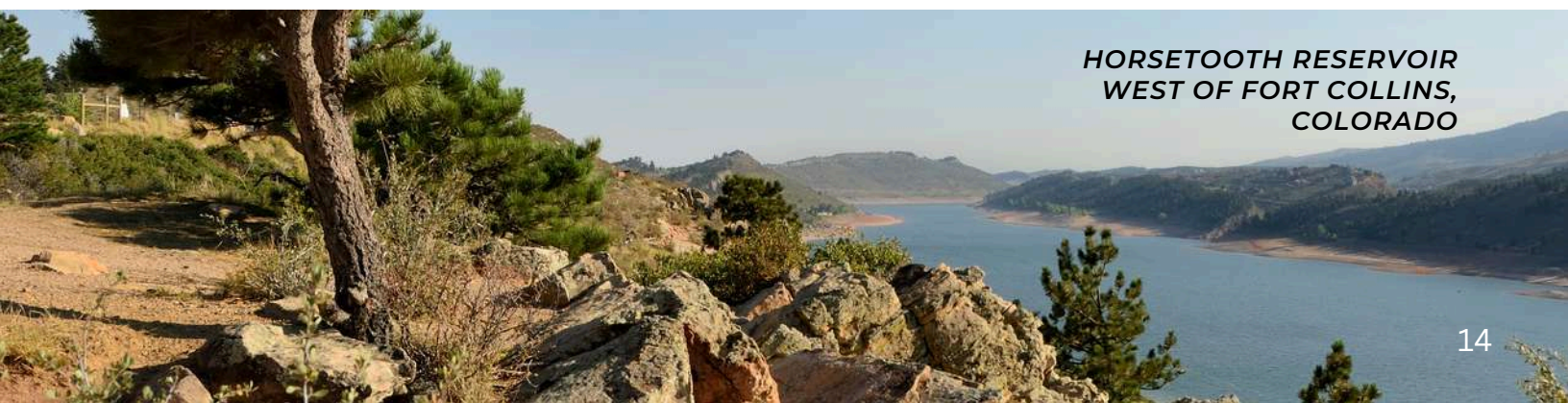
Salon A-D *denotes student

~ Moderator - Francesco Negro

- ***Sustainable Development – International Framework – Overview and Analysis in the Context of Forests and Forest Products – Tools for the Sustainable Development*** - Annika Hyytiä* (University of Helsinki)
- ***Timber Engineering for Equitable Communities*** - Garrett Tatum (University of Wyoming)
- ***Transparent Wood: A Sustainable and Versatile New Age Material*** - Priya Bisht (Faculty), Krishna K Pandey (Institute of Wood Science & Technology)



- ***Eco-friendly Wood Protection Using Cellulose Nanofiber-based Hydrophobic Coatings: A Sustainable Approach for Enhanced Water Resistance*** - Junsik Bang* (Seoul National University), Jungkyu Kim (Seoul National University), Seungoh Jung (Seoul National University), Bonwook Koo (Kyungpook National University), Jungkwon Oh (Seoul National University), Hwanmyeong Yeo (Seoul National University), In-Gyu Choi (Seoul National University), Hyo Won Kwak (Seoul National University)
- ***Natural Preservatives for Poorly Seasoned Wood Species*** - Musifat Kolapo (Olabisi Onabanjo University)
- ***Mechanical Properties Assessment of Indigenous Timber Wood Species in an Afrotropical region*** - Chinaza Adibe* (Michael Okpara University of Agriculture)
- ***Evaluation of Shrinkage Regime of Three Tropical Hardwood Species for the Production of Glue-Laminated Objects*** - Adedeji Robert Ojo (Forestry Research Institute of Nigeria), Temitayo Rebecca Ojo-Adedeji (Federal College of Forestry, Ibadan)
- ***Detection of Defect Bonds in CLT Panels Using Ultrasonic Techniques and Resistance Microdrilling*** - David Decky (Mendel University in Brno), Luděk Praus (Mendel University in Brno), Mojtaba Hassan Vand (Mendel University in Brno), Ema Kovačević (Mendel University in Brno), Václav Sebera (Mendel University in Brno)
- ***Physiochemical and Elemental Composition of Trichosanthes Cucumerina Seed Oil*** - Samuel Afolabi* (University of Ibadan), Adenike-Adeniyi Aremo (Osun State University), Abiodun Oluwadare (University of Ibadan)
- ***Introduction of Cellulose Nanofibril (CNF), and Plasma Treatment for Robust Biodegradable Natural Fiber-reinforced Plastics*** - Seungoh Jung* (Seoul National University), Junsik Bang (Seoul National University), Jungkyu Kim (Seoul National University), Bonwook Koo (Kyungpook National University), Jungkwon Oh (Seoul National University), Hwanmyeong Yeo (Seoul National University), In-Gyu Choi (Seoul National University), Hyo Won Kwak (Seoul National University)



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COLORADO**

10:00 - 10:30 AM | BREAK AND EXHIBITS

10:30 AM - 12:00 PM | CONCURRENT SESSIONS *denotes student

Session 4.1 Salon A-D - Talk of the Town in your Area or Region: From Stakeholder Initiatives to Cooperative Extension Efforts in Wood/Forest Products I

~ Session Organizers - Brian Bond (Virginia Tech), Scott Leavengood (Oregon State University), Frederik Laleicke (North Carolina State University)

~ Moderator - Scott Leavengood

- ***Driving Innovation Through Extension in Engineering*** - Vikram Yadama (Washington State University)
- ***NC Wood Products Extension: Working with Businesses Across the Country*** - Frederik Laleicke (North Carolina State University)
- ***Hardwood University - Technical Education for Primary and Secondary Hardwood Industries*** - Rado Gazo (Purdue University), Eva Haviarova (Purdue University)
- ***Alternative Structural Lumber Grading at the State Level*** - Adam Taylor (University of Tennessee)
- ***Near-Peer Mentoring to Attract and Recruit Young Rural Women and Minorities in Forest Sector*** - Pipiet Larasatie (Virginia Tech), Ana Gutierrez (University of Arkansas Monticello), Elena Rubino (University of Arkansas at Monticello), Kamana Chamlagain (University of Arkansas at Monticello), Jolene Hammock (University of Arkansas at Monticello)
- ***Wood Product Extension Training and Wood Recovery Programming in Kentucky*** - Chad Niman (University of Kentucky)

Session 4.2 Salon E - Advanced Characterization in Forest Products Research II

~ Session Organizers - Nayomi Plaza (USDA FS Forest Products Laboratory), Laura Hasburgh (USDA FS Forest Products Laboratory), Katie Ohno (USDA FS Forest Products Laboratory), Nathan Bechle (USDA FS Forest Products Laboratory)

~ Moderators - Nayomi Plaza and Oswaldo Erazo

- ***Virtual Reality of Wood Anatomy and Protection*** - Dengcheng Feng* (University of British Columbia), Yan Liu (Carleton University), Michael Turner (Australian National University), Ajay Limaye (Australian National University), Philip Evans (University of British Columbia)

- ***Color Modification of Appalachian Hardwoods by Thermal Treatment Methods*** - Levente Denes (West Virginia University)
- ***Characterization and Pyrolysis of Slash Biomass from Douglas Fir and Red Alder in Oregon*** - Alhassan Ibrahim (Oregon State University), Gerald Presley (Oregon State University), Islam Hafez (Oregon State University)
- ***Mycelium/Paper-Based Composite Materials for Insulation Applications*** - Emmanuel Osei-Bonsu* (University of Idaho), Lili Cai (University of Idaho), Armando McDonald (University of Idaho), Damon Woods (University of Idaho)
- ***Using Notch Delamination to Study Moisture Adhesive Interaction*** - Samuel Ayeni* (Oregon State University)
- ***Effect of Thickness Variations on Clamping Pressure Redistribution Transfer in Cross-Laminated Layups with Uneven Thicknesses in the Adjacent Laminations*** - Samson Idoghor* (Oregon State University), Lech Muszynski (Oregon State University), Fatemeh Rezaei (Mississippi State University), John Nairn (Oregon State University)



12:00 - 1:30 PM | LUNCH AND WOOD SCIENCE BOWL

1:30 - 3:00 PM | CONCURRENT SESSIONS *denotes student

Session 5.1 Salon A-D - Talk of the Town in your Area or Region: From Stakeholder Initiatives to Cooperative Extension Efforts in Wood/Forest Products II

~ Session Organizers - Brian Bond (Virginia Tech), Scott Leavengood (Oregon State University), Frederik Laleicke (North Carolina State University)

~ Moderators - Brian Bond and Frederik Laleicke

- ***Dealing with Change: A Look into the Past and into the Future for Wood Products Extension*** - Brian Bond (Virginia Tech), Marshall White (Virginia Tech)
- ***Wood Products Extension at Oregon State University – Reflections on the Past 5 Decades*** - Scott Leavengood (Oregon State University)
- ***Panel discussion with moderator Henry Quesada and members Adam Taylor, Scott Leavengood, Frederik Laleicke, Rado Gazo, Brian Bond, Pipiet Larasatie, and Chad Niman***

Session 5.2 Salon E - Sustainable Advanced Manufacturing of Value-added Wood Products through Innovative Pathways I

~ Session Organizers - Daniel Saloni (North Carolina State University), Frederik Laleicke (North Carolina State University)

~ Moderator - Daniel Saloni

- ***Structural Properties of Lumber from Small Logs Generated in Forest Thinning Operations: Bending Properties*** - Michelle Jayawickrama* (Oregon State University), Lech Muszynski (Oregon State University), Dessie Tibebu (Oregon State University), Elijah Olawumi (Oregon State University)
- ***Reevaluation of Mechanical Characteristics of Lumber from Small-Diameter Logs: Small Clear Specimens*** - Elijah Olawumi* (Oregon State University), Lech Muszynski (Oregon State University), Michelle Jayawickrama (Oregon State University), Dessie Tibebu (Oregon State University)
- ***Soy Flour-Modified pMDI Resin Improves Wood Composite Properties by Suppressing Steam Generation*** - Brian Via (Auburn University)
- ***Non-destructive Evaluation to Sort and Evaluate Red Maple Veneers and Associated Laminated Veneer Lumber (LVL)*** - Dalila Belaidi* (Mississippi State University), Mostafa Mohammadabadi (Mississippi State University), Rubin Shmulsky (Mississippi State University), wang xiping (USDA FS Forest Products Laboratory)
- ***Evaluating the Adhesive Properties of a Novel Biobased Cement for the Manufacture of Particleboards*** - Courage Alorbu* (University of Idaho), Dylan Willard (University of Idaho), Armando McDonald (University of Idaho), Lili Cai (University of Idaho)



3:00 - 3:30 PM | BREAK AND EXHIBITS

3:30 - 5:00 PM | CONCURRENT SESSIONS *denotes student

Session 6.1 Salon A-D - Formulating Sustainability in the Forest Products Industry I

~ Session Organizers - Hyo Won Kwak (Seoul National University), Bonwook Koo (Kyungpook National University), Glenn Larkin (LarChem LLC)

~ Moderators - Hyo Won Kwak, Bonwook Koo, and Glenn Larkin

- ***Strategic Approaches to the Cascading use of Wood Resources in Korea*** - Joo-saeng Park (National Institute of Forest Science)

- ***Analysis of the Governance Systems of the Forestry Sector in Ghana: A Multidimensional and Sustainability-Based Approaches*** - Bernard Effah (Akenten-Appiah Menka University of Skills Training & Entrepreneurial Development), Peter Kessels Dadzie (Kumasi Technical University)
- ***Analyse the Size and Location of Timber Deterioration by Non-Destructive Test*** - KugBo Shim (Chungbuk National University), HyungJoon Han (Chungbuk National University), KyoungHyun Ryu (Chungbuk National University)
- ***Environmental Performance of Hardwood Product Production Over Time*** - Richard Bergman (USDA FS Forest Products Laboratory), Scott Bowe (University of Wisconsin), Poonam Khatri (USDA FS Forest Products Laboratory), Matthew Bumgardner (USDA FS Forest Products Laboratory)
- ***Optimizing Biomass Utilization and Sustainability Through Multi-Feedstock and Multi-Product Pathways in the MASBio Project*** - Jayendra Ahire (USDA FS Forest Products Laboratory), Richard Bergman (USDA FS Forest Products Laboratory), Troy Runge (University of Wisconsin), Debangsu Bhattacharyya (West Virginia University), Tristian Brown (SUNY), John Hu (West Virginia University), Nate Anderson (USDA FS Rocky Mountain Research Station), Jingxin Wang (North Carolina State University)



Session 6.2 Salon E - Sustainable Advanced Manufacturing of Value-added Wood Products through Innovative Pathways II

~ Session Organizers - Daniel Saloni (North Carolina State University), Frederik Laleicke (North Carolina State University)

~ Moderators - Daniel Saloni and Frederik Laleike

- ***Innovation in the Forest Industry - Past, Present, and Future*** - Scott Leavengood (Oregon State University)
- ***Interrelated Factors Governing the Densification of Yellow Poplar*** - Gloria Oporto (West Virginia University), Balazs Bencsik (West Virginia University), Levente Denes (West Virginia University), Joseph McNeel (West Virginia University), Luke Chaddock (West Virginia University)
- ***Sustainable Bonding of Engineered Wood Panels Using Sodium Hydroxide: An Eco-Friendly Alternative to Petroleum-Based Adhesives*** - Elnaz Jamshidi* (Georgia Tech)
- ***Thermally treated wood: insights and perspectives from the industrial experience of the ThermoVacuum process*** - Alessio Lucarelli (WDE MASPELL)

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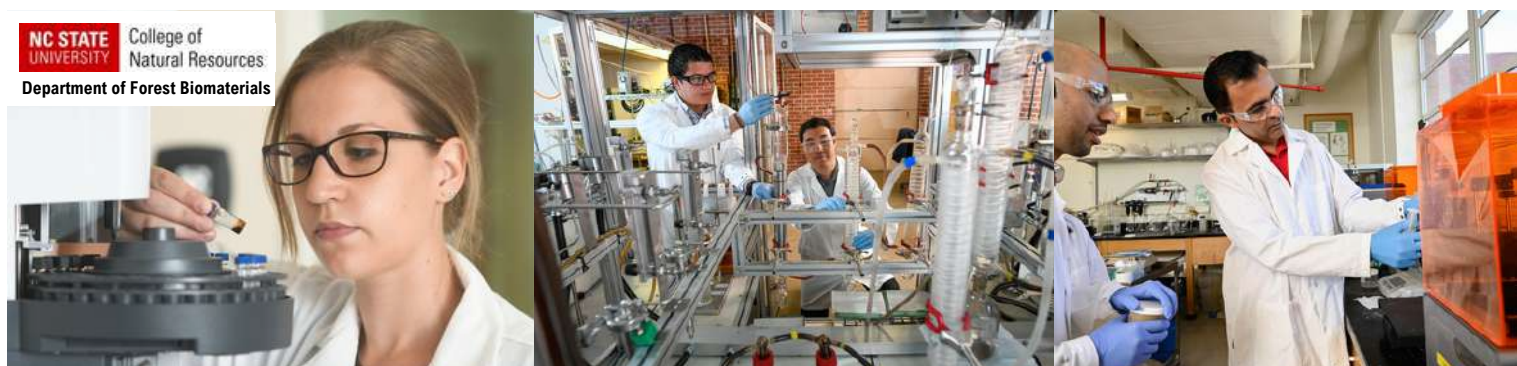
- **Wood Chip Moisture Content Prediction Through Transfer Learning-enhanced Regression Analysis** - Tilak Neupane* (Mississippi State University), Jason Street (Mississippi State University), Abdur Rahman (Mississippi State University), Haifeng Wang (Mississippi State University), Mohammad Marufuzzaman (Mississippi State University)
- **A Novel Efficiency-improved Strategy for Heat Treatment Endowing Wood with Superior Dimensional Stability and Fire Resistance** - Demiao Chu (Anhui Agricultural University), Xiaochuan Ren (Anhui Agricultural University), Stavros Avramidis (University of British Columbia), Sohrab Rahimi (University of British Columbia), Shengquan Liu (Anhui Agricultural University)



5:30 - 7:30 PM | POSTER SESSIONS Salon F *denotes student

- **Yield, Above-ground Carbon Stock and Price Dynamics of Selected Agroforestry Tree Species in District Buner, Khyber Pakhtunkhwa** - Zia Muhammad* (Zia Muhammad)
- **A Study on How to Promote the use of Forest-based Bioproducts and Develop Business Models** - Yonggun Park (National Institute of Forest Science), Yoon-Seong Chang (National Institute of Forest Science), Soon Gil Kwon (National Institute of Forest Science)
- **Apple Pomace Fermentation Broth as a Potential Biobased Road Deicer** - Listowell Darko* (University of Idaho), Armando McDonald (University of Idaho)
- **Modification of Hemp Shiv Properties Using Novel Functionalized Silica Coatings to Develop Sustainable Thermally Insulated Building Materials** - Ukasha Tiibu Mohammed* (University of Massachusetts Amherst)
- **Microwave-Assisted Recycling of Spent Cells using Plastic Waste and Agricultural Waste** - Abubakar Seidu (Ghana Manganese Company Ltd), Munkaila Musah (University of Massachusetts)
- **Effect of Particle Size on Wheat Midds Biomass Composition** - Ruth Azike* (University of Idaho), Armando McDonald (University of Idaho), Ezra Bar-Ziv (Michigan Technological university)
- **Life Cycle Assessment of Negative Carbon Sustainable Aviation Fuels from Paper Sludge** - Jiawei Huang* (North Carolina State University), Yinqiao Wang (North Carolina State University), Kai Lan (North Carolina State University)

- **Nondestructive Evaluation of Wood Properties of Fire Damaged Hard Pines** - Nkolika B. Omoni* (Mississippi State University), Frederico Jose Nistal Franca (Mississippi State University), Xiping Wang (USDA FS Forest Products Laboratory), Thomas Eberhardt (USDA FS Forest Products Laboratory)
- **Enhancing Timber Piles Inspection in SC Bridges Using Non-destructive Methods** - Aashish Sapkota* (Clemson University), Brandon Ross (Clemson University), Brunela Pollastrelli Rodrigues (Clemson University)
- **Analysing LULC Transformations using Remote Sensing Data: Insights from a Multilayer Perceptron Neural Network Approach** - Khadim Hussain (Beijing Forestry University)
- **Wood Artifacts Historic Pilot Project** - Loralie Pace* (Mississippi State University), Elizabeth Stokes (Mississippi State University)
- **Investigation of Guayule Resin as an Oil-based Wood Treatment** - Jordan Miller* (Mississippi State University), Elizabeth Stokes (Mississippi State University)



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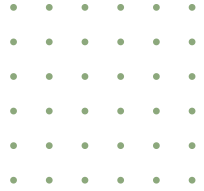
The Department of Forest Biomaterials is a research powerhouse with an ecosystem built for achievement and collaboration. Using fundamental science and applied engineering skills, coupled with financial and life cycle analyses, our faculty and students examine the practical uses of forest biomass as renewable resources that could form the basis for many products in the future, including biofuels, bioenergy, bioplastics, chemicals, housing materials, composite components and more.

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- Novel Forest-based biomaterials
- Paper science and processes
- Renewable chemicals and Energy
- Business processes and innovation
- Sustainable materials and technology





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- 
- ***Determining the Toxic Threshold of Industrial Hemp Seed Oil as a Wood Protectant*** - Daylan Barnes* (Mississippi State University), Elizabeth Stokes (Mississippi State University)
 - ***Life Cycle Assessment and Valorization of Hazelnut Shells into Value-added Products*** - Proknight (Cheng-Chi), Kao* (Oregon State University), Alhassan Ibrahim (Oregon State University), Islam Hafez (Oregon State University), Gerald Presley (Oregon State University)
 - ***Assessing Wood Specific Gravity in Eucalyptus Clones across Contrasting Environments using Micro-drilling Resistance*** - Anjila Lamichhane* (Clemson University), Jose Tarcisio da Silva Oliveira (Federal University of Espirito Santo), Braz Jose Demuner (Suzano Papel e Celulose), Brunela Pollastrelli Rodrigues (Clemson University)
 - ***Phytoremediation Potential of Chromolaena odorata in Soils Polluted with Heavy Metals and Radionuclides from Quarry Site in Ibadan Oyo State, Nigeria*** - Olusegun Olushola Adetola (Forestry Research Institute of Nigeria), Mike Isese (Forestry Research Institute of Nigeria)
 - ***In situ Synthesis of Prussian Blue on the Lignin for Ultrafast and Highly Selective Cesium Adsorption*** - Jungkyu Kim* (Seoul National University), Junsik Bang (Seoul National University), Seungoh Jung (Seoul National University), Bonwook Koo (Kyungpook National University), Jungkwon Oh (Seoul National University), Hwanmyeong Yeo (Seoul National University), In-Gyu Choi (Seoul National University), Hyo Won Kwak (Seoul National University)
 - ***Biobased Novolac Composites: Flow, Curing and Mechanical Properties*** - Japneet Kukal* (University of Idaho), Armando McDonald (University of Idaho)
 - ***Carbon Stock Assessment of Chirpine Forest and Plantation in District Buner, Kyhber Pakhtunkhwa, Pakistan*** - Zakir Ullah (Benazir Income Support Program)
 - ***Concept of a Strategy for the Development and Sustainability of Wood-processing Family Businesses in the European Union*** - Mariana Sedliačiková (Technical University in Zvolen), Martin Halasz (Technical University in Zvolen), Denis Pinka (Technical University in Zvolen)
 - ***Reevaluation of Mechanical Characteristics of Lumber from Small-Diameter Logs: Small Clear Specimens*** - Elijah Olawumi* (Oregon State University)


- **Wooden Origami Unfolding Layered Design: A Singular Sustainable Systematic Chair** - Rico Ruffino (North Carolina State University)
- **Driving Change: Hardwood CLT- Concept to Code Approval** - Brian Bond (Virginia Tech), Henry Quesada (Purdue University), Sailesh Adhikari (Virginia Tech), Daniel Hindman (Virginia Tech)
- **Anatomical and Mechanical Variability in Coconut Palm Wood: A Comparative Study of Mexican and Indonesian Species** - Leila Fathi (Shahrekord University), Mohammad Dahmardeh Ghalehno (University of Zabul), Redžo Hasanagić (University of Bihać), Mohsen Bahmani (Shahrekord University)
- **Empowering Future Leaders in Timber and Digital Manufacturing: The REEU Experience** - Allison Culver (Oregon State University), Arijit Sinha (Oregon State University), Eric Hansen (Oregon State University)
- **Forests and Forest Products in the Circular and Bioeconomy Businesses** - Annika Hyytiä* (University of Helsinki)



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- ***Correlative Microscopy of Cellulose Nanofibrils*** - Christopher G. Hunt (USDA FS Forest Products Laboratory), Peter Kitin (USDA FS Forest Products Laboratory), Xiaoxue Zhang (Nanjing Forestry University), Junyong Zhu (USDA FS Forest Products Laboratory)
- ***Tailoring the Properties of Biochar for Enhanced Performance of Wood-based Composites*** - Samuel Olajide* (Oregon State University), Islam Hafez (Oregon State University), Alhassan Ibrahim (Oregon State University), Gerald Presley (Oregon State University)
- ***Disaster Response Housing Solutions: Insights from an Educational Experience*** - Hillary Johnson* (Oregon State University)
- ***Life Cycle Assessment of the Construction Process in a Mass Timber Structure*** - Mahboobeh Hemmati* (University of Arkansas), Tahar Messadi (University of Arkansas), Hongmei Gu (USDA FS Forest Products Laboratory)
- ***Operational Carbon Reduction Strategies for Mass Timber Buildings: A Life Cycle Assessment of Energy Use in Adohi Hall*** - Moein Hemmati* (University of Arkansas), Tahar Messadi (University of Arkansas), Hongmei Gu (USDA FS Forest Products Laboratory), Mahboobeh Hemmati (University of Arkansas)
- ***Moisture Content Analysis of Soil-Mixed Woody Biomass Using Near-Infrared Spectroscopy for Efficient Resource Utilization*** - Minjee Kang (Seoul National University), Bat-Uchral Batjargal (Seoul National University), Taekyeong Lee (Seoul National University), Hwanmyeong Yeo (Seoul National University), Youngmin Cho (Seoul National University), Sangwoo Park (Seoul National University), Hyo Won Kwak (Seoul National University), In-Gyu Choi (Seoul National University), Sung-Wook Hwang (Kyungpook National University)
- ***Computational Simulation of Internal Heat and Moisture Distribution Dynamics During Kiln Drying of Large Cross-Section Timber*** - Minjee Kang (Seoul National University), Taekyeong Lee (Seoul National University), Hwanmyeong Yeo (Seoul National University), Chang-Jin Lee (Jeonbuk National University)
- ***Shear Connection Analysis for CLT Sandwich Panels*** - Ryan Hennings* (University of Wyoming), Jeremiah Miller (University of Wyoming), Ian Morrell (Tennessee Technological University), Garrett Tatum (University of Wyoming)
- ***Techno-economic Analysis of Yellow-poplar Cross Laminated Timber Manufacturing*** - Luke Chaddock* (West Virginia University), Levente Denes (West Virginia University), Balazs Bencsik (West Virginia University), Gloria Oporto (West Virginia University)

- ***Mycelium-Based Composites: A Sustainable Alternative to Formaldehyde-Based Adhesives*** - Astrid Melissa Rojas Marquez* (Auburn University), Abiodun Alawode (Auburn University), Iris Beatriz Vega Erramuspe (Auburn University), Brian Via (Auburn University)
- ***Enhancing Sustainability in Ghana's Domestic Timber Trade: Forensic Insights into Wood Misrepresentation Through Anatomy and Mechanical Properties Analysis*** - Eunice Adum-Atta* (Kwame Nkrumah University of Science and Technology), Kwadwo Boakye Boadu (Kwame Nkrumah University of Science and Technology)
- ***Innovating for Sustainability: A New Online Master's Program in Wood Science*** - Allison Culver (Oregon State University), Mariapaola Riggio (Oregon State University), Eric Hansen (Oregon State University)
- ***Various Properties of MCC-reinforced PLA/PHA/PBAT Ternary Blend Biocomposites Fabricated by Fused Deposition Modeling (FDM), 3D Printing*** - Birm-June Kim (Kookmin University)



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- ***Sustainable Development – International Framework – Overview and Analysis in the Context of Forests and Forest Products with Sustainable Policy Development*** - Annika Hyytiä* (University of Helsinki)
- ***Fabrication and Characterization of COMPOLEs from Lumber of Southern Pine (Pinus sp.), Trees*** - Ershad Ahmmed (Mississippi State University), Mostafa Mohammadabadi (Mississippi State University), Rubin Shmulsky (Mississippi State University), Jason Street (Mississippi State University), Kevin Ragon (Mississippi State University)
- ***Understanding the Fundamental Influence of Wood Extractives on Wood adhesion*** - Diego Cuartas* (Auburn University)
- ***Evaluating User-Friendly and Portable Kiln Technologies for Sustainable Biochar Production in Ghana*** - Francis Asare* (Purdue University), Rado Gazo (Purdue University), Eva Haviarova (Purdue University), Francis Wilson Owusu (Kwame Nkrumah University of Science and Technology), Shristi Shefali Saraugi (Purdue University)
- ***Utilization of Walnut Plantation Thinnings and Challenges Related to Product Marketing*** - Eva Haviarova (Purdue University), Ting-Ho Tsai (Purdue University)
- ***Bioinspiration and Sustainable Product Development: Connecting Theory and Practice in the Global Educational Space*** - Eva Haviarova (Purdue University), Zuzana Tončíková (Technical University of Zvolen)
- ***Reciprocal Structures as a Practical Teaching Methodology for Wood Designs*** - Eva Haviarova (Purdue University), Manja Kitek Kuzman (University of Ljubljana)
- ***Evaluation of the Applicability of Fire Resistance Design Method for Glulam using Reduction Factor*** - Sanghyun You* (Seoul National University), Kyungsun Ahn (Seoul National University), Min-Jeong Kim (Seoul National University), Gwangryul Lee (Seoul National University), Haeseon Hwang (Seoul National University), Jungkwon Oh (Seoul National University)
- ***Effect of Wooden Indoor Environments on the Psychological and Physiological Responses*** - Jiyeon Yang (National Institute of Forest Science), Suyeon Lee (National Institute of Forest Science), Keon-Ho Kim (National Institute of Forest Science), Gwak Gyu Jo (National Institute of Forest Science), Dasom Ahn (National Institute of Forest Science)



- ***Shear Performance Evaluation of Self-Tapping Screw Joints in Larch CLT Under Cyclic Loading*** - Jiyeon Yang (National Institute of Forest Science), Keon-Ho Kim (National Institute of Forest Science), In-Hwan Lee (National Institute of Forest Science), Su-Yeon Lee (National Institute of Forest Science)
- ***Determination Soil Carbon Stock in Forest of Miandam Valley Wwat Pakistan and its Implication to REDD*** - Hakim Ullah Khan* (Beijing Forestry University)
- ***Evaluating the Environmental Impact and Carbon Sequestration Potential of Mass Timber Construction*** - Mahboobeh Hemmati* (University of Arkansas), Tahar Messadi (University of Arkansas), Hongmei Gu (USDA FS Forest Products Laboratory), Moein Hemmati (University of Arkansas)
- ***Dynamics of Urbanization on the Land Use Pattern and their Impact on Land Surface Temperature of Nigerian Cities*** - Olabode Jolomi* (Ekiti State University), Aladesanmi Agbelade (Ekiti State University)
- ***Particleboards Made from Orange and Turkey Oak Wood Species using Modified Starch as Bonding Agent*** - Luigi Todaro (University of Basilicata), Valentina Lo Giudice (University of Basilicata), Francesco Negro (University of Torino), Giacomo Goli (University of Florence)
- ***Performance of Edge-Bonded Cross-laminated Timber from Small-Diameter Tree Generated from Forest Restoration Program*** - Dessie Tibebu* (Oregon State University)
- ***Potential Application of Sunflower Stalk Particles in the Manufacture of Lightweight Particleboards*** - Pavlo Bekhta (Technical University in Zvolen), Vladimír Gryc (Mendel University in Brno), Tomáš Pipíška (Mendel University in Brno), Jozef Ráhel' (Mendel University in Brno), Peter Jurkovič (VIPO, a.s. Partizánske), Ján Sedliačik (Technical University in Zvolen)
- ***Hempcrete Modification and Characterization for Sustainable Building Systems*** - Emmanuel Ohemeng* (University of Massachusetts Amherst), Munkaila Musah (University of Massachusetts)
- ***Enhancing Standardized Testing Methods for Thermally Fused Laminates and Wood Mouldings: Bridging Laboratory and Real-World Performance*** - JT Chappell (North Carolina State University), Daniel Saloni (North Carolina State University)

SWST International Convention

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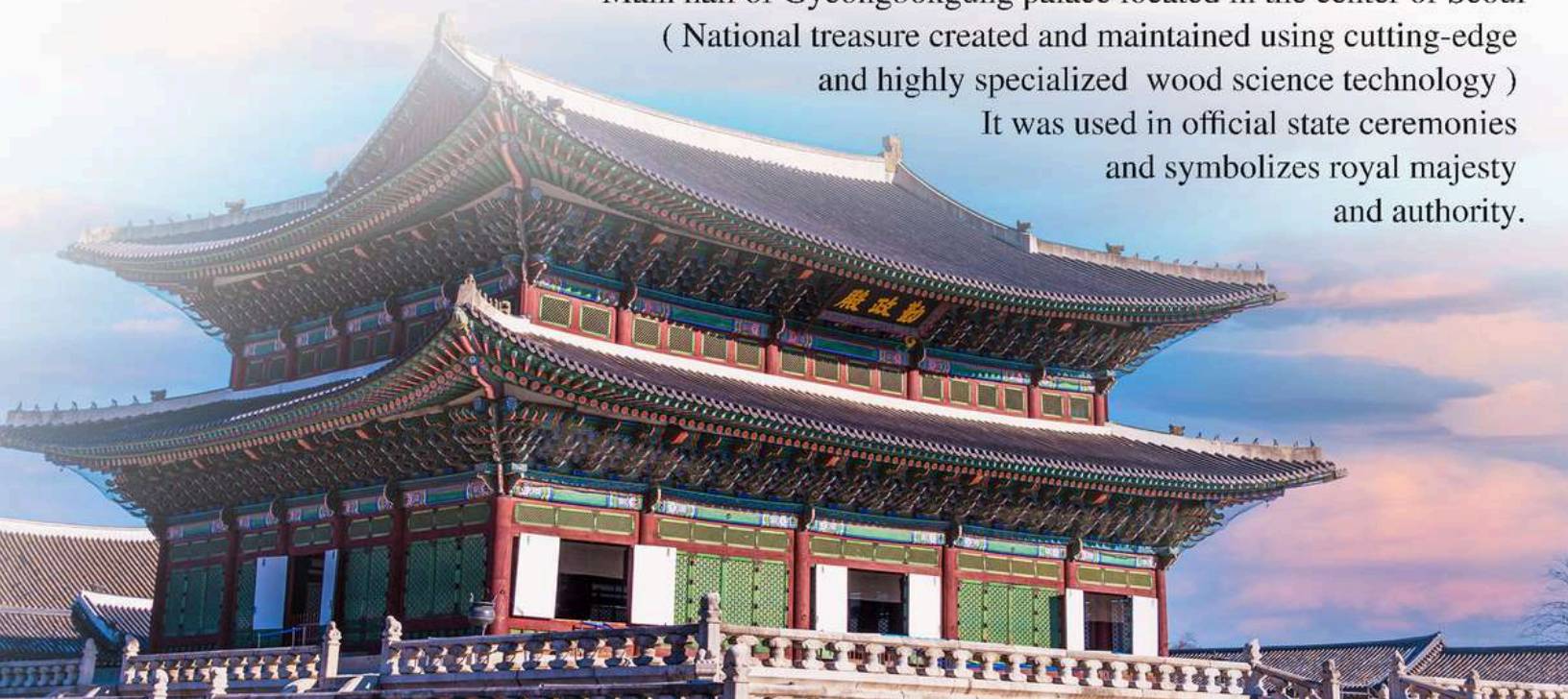
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- ***Surface and Adhesive Properties of Alder Wood Treated by Steam and Plasma*** - Peter Jurkovič (VIPO, a.s. Partizánske), Igor Novák (Slovak Academy of Sciences), Matej Mičušík (Slovak Academy of Sciences), Pavlo Bekhta (Technical University in Zvolen), Ján Matyašovský (VIPO, a.s. Partizánske), Ján Sedliačik (Technical University in Zvolen)
- ***Synthesis of Bio-Based Binder Using Lignin via Vinyl Polymerization Methods*** - GeunWoo Han* (Seoul National University), Youngmin Cho (Seoul National University), Jun Ho Shin (Seoul National University), Hanhee Kim (Seoul National University), HoYong Kim (Korea research Institute of Chemical Technology), Hyo Won Kwak (Seoul National University), Hwanmyeong Yeo (Seoul National University), In-Gyu Choi (Seoul National University)
- ***Wood and Wood Products Impact in Carbon Capturing and Storage*** - Gloria Anguruwa (Forestry Research Institute of Nigeria), Clement Olaoluwa Fakorede (Forestry Research Institute of Nigeria), Chioma Ada Odega (Forestry Research Institute of Nigeria), Idowu Tolulope Ademola (Forestry Research Institute of Nigeria)
- ***Evaluating the Mechanical Properties of 3D Printable Earthen Material Reinforced by Forest-Based Products*** - Biva Gyawali* (Oregon State University), Ashley J Mccann (Oregon State University), Kai Bentley (Oregon State University), Ashish Bastola (Oregon State University), Pavan Akula (Oregon State University), Ramtin Haghnazar (Virginia Tech), Kamran Alba (University of Houston), Vahid Nasir (Oregon State University)
- ***Low Formaldehyde Emission Plywood Bonded with Collagen-modified Urea-formaldehyde Resin*** - Ján Sedliačik (Technical University in Zvolen), Ján Matyašovský (VIPO, a.s. Partizánske), Igor Novák (Slovak Academy of Sciences), Matej Mičušík (Slovak Academy of Sciences), Pavlo Bekhta (Technical University in Zvolen), Peter Jurkovič (VIPO, a.s. Partizánske)
- ***The Effect of Beech Wood Modifications on Formaldehyde Emission and the Bonding Quality of Plywood*** - Ján Matyašovský (VIPO, a.s. Partizánske), Igor Novák (Slovak Academy of Sciences), Peter Jurkovič (VIPO, a.s. Partizánske), Angela Kleinová (Slovak Academy of Sciences), Ján Sedliačik (Technical University in Zvolen)
- ***Structural Properties of Lumber from Small Logs Generated in Forest Thinning Operations: Bending Properties*** - Michelle Jayawickrama* (Oregon State University)
- ***Predicting Size Effect in Veneer-Based Structural Joists Based on Small-Sample Test Results*** - Samuel Donkor* (Oregon State University)

- ***Effect of Thickness Variations on Clamping Pressure Redistribution Transfer in Cross-Laminated Layups with Uneven Thicknesses in the Adjacent Laminations*** - Samson Idoghor* (Oregon State University)
- ***Adhesive Bonding Performance of Cross-Laminated Timber Made of Thermally Modified and Unmodified Wood*** - Abasali Masoumi* (Virginia Tech), Brian Bond (Virginia Tech), Daniel Hindman (Virginia Tech), William Nguegang Nkeuwa (Virginia Tech), Audrey Zink Sharp (Virginia Tech)
- ***Vibrational and Stress-wave Methods for Rapid and Cost-effective Assessment of Veneer-based Mass Timber Elements*** - Vahid Nasir (Oregon State University), Autumn Battisti (Oregon State University), Mariapaola Riggio (Oregon State University)
- ***Sustainable Cross-Laminated Timber: A Comparative Life Cycle Assessment of Yellow Poplar and Douglas-Fir CLT in the Central United States*** - Jue Mo (University of Washington), Tianle Deng (Purdue University), Eva Haviarova (Purdue University), Fu Zhao (Purdue University)
- ***Mass Timber Building Inspection Using Resistance Drilling*** - Opeyemi Odule* (Oregon State University), Gerald Presley (Oregon State University), Laurence Schimleck (Oregon State University), Mariapaola Riggio (Oregon State University), Vahid Nasir (Oregon State University)
- ***BUILD'EM: A Lignin-based Resin to Compete with Phenol-Formaldehyde*** - Paul Meyer (National Renewable Energy Laboratory), Jingying Hu (National Renewable Energy Laboratory), Heather Goetsch (National Renewable Energy Laboratory), Hudson Neyer (National Renewable Energy Laboratory), Elise Harrison (National Renewable Energy Laboratory)
- ***Cross-Laminated Strand-Veneer Lumber and the Influence of Thermal Modification on their Structural and Fire Performance*** - Vikrama Yadama (Washington State University), Avishek Chanda (Washington State University), Rajan Adhikari (Weyerhaeuser Technology Center), Muhammad Khusairy Bin Bakri (Washington State University), Matt Aro (University of Minnesota)



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WEDNESDAY, JUNE 18

7:30 - 8:30 AM | CONTINENTAL BREAKFAST

7:30 AM - 3:30 PM | REGISTRATION

8:30 - 10:00 AM | CONCURRENT SESSIONS *denotes student

Session 7.1 Salon A-D - Formulating Sustainability in the Forest Products Industry II

~ Session Organizers - Hyo Won Kwak (Seoul National University), Bonwook Koo (Kyungpook National University), Glenn Larkin (LarChem LLC)

~ Moderators - Hyo Won Kwak, Bonwook Koo, and Glenn Larkin

- ***Timber-Concrete Composite Slab for Carbon-Neutrality and the Cascaded Use of Wood Resource*** - Jungkwon Oh (Seoul National University)
- ***Shifting Formaldehyde-Based Wood Adhesives to Lignin -Based Adhesives for Sustainability in Wood Bonding*** - Byung-Dae Park (Kyungpook National University), Saman Ghahri (Kyungpook National University), Ega Cyntia Watumlawar (Kyungpook National University), Eko Setio Wobowo (National Research and Innovation Agency)
- ***Assessing Mill Residue and Roundwood Equivalent Factors*** - Edward Seabright (University of Tennessee), Consuelo Brandeis (USDA Forest Service), Adam Taylor (University of Tennessee)
- ***Evaluation of Recovery Rate Determinants for Eucalyptus globulus in Small-Scale Sawmills: A Case Study in Addis Ababa, Ethiopia*** - Moti Kenise (Federal Technical and Vocational Training Institute)
- ***Analysis of Energy Savings in Kiln-Drying Systems Utilizing Solar Energy as an Auxiliary Heat Source*** - Yonggun Park (National Institute of Forest Science), Wonho Jin (National Institute of Forest Science), Min Lee (National Institute of Forest Science), Hyoung Woo Lee (Chonnam National University)
- ***Suitability and Potentials of Corn Sheaths for Paper Production*** - Mojibayo Ikusedun* (Federal Institute of Industrial Research), Adewole Ayobami Aderinlewo (Federal University of Agriculture), Olayemi Johnson Adeosun (Federal University of Agriculture), Babatunde Saheed Bada (Federal University of Agriculture), Olajumoke Deborah Fagbemi (Federal Institute of Industrial Research Oshodi), Omolara Fatunmibi (Federal Institute of Industrial Research Oshodi), Temitope Alake (Federal Institute of Industrial Research Oshodi)



Session 7.2 Salon E - Sustainable Advanced Manufacturing of Value-added Wood Products through Innovative Pathways III

~ Session Organizers - Daniel Saloni (North Carolina State University), Frederik Laleicke (North Carolina State University)

~ Moderators - Daniel Saloni and Frederik Laleicke

- ***Closing the Loop: Recycling PLA 3D Printing Waste for a Sustainable Campus Makerspace*** - Daniel Saloni (North Carolina State University), Catherine Kirch (North Carolina State University)
- ***Wood Plastic Composite Feedstock Options for Extrusion-based Large Scale Additive Manufacturing*** - Douglas Gardner (University of Maine)
- ***Novel Green Chemistry Strategies for Enhancing Wood Surface Hardness*** - Vahideh Akbari* (Laval University), Véronic Landry (Laval University)
- ***Development and Evaluation of PHBV-biomass Composite Pellets as a Novel Value-Added Product from Renewable Biomass Resources*** - Md Tamzidul Alam* (Louisiana State University Agricultural Center)
- ***A Novel Efficiency-improved Strategy for Heat Treatment Endowing Wood with Superior Dimensional Stability and Fire Resistance*** - Demiao Chu (Anhui Agricultural University), Xiaochuan Ren (Anhui Agricultural University), Stavros Avramidis (University of British Columbia), Sohrab Rahimi (University of British Columbia), Shengquan Liu (Anhui Agricultural University)



10:00 - 10:30 AM | BREAK AND EXHIBITS

10:30 AM - 12:00 PM | CONCURRENT SESSIONS *denotes student

Session 8.1 Salon A-D - Trends in Education and Workforce Development Practices in Forest Products-related Disciplines I

~ Session Organizers - Gloria Oporto (West Virginia University), Nayomi Plaza (USDA FS Forest Products Laboratory)

~ Moderators - Nayomi Plaza and Gloria Oporto

- ***SWST Accreditation: Shaping the Future of Wood Science and Technology Education and its Role in the Forest Products Industry*** - Judith Gisip (Universiti Teknologi MARA), Eric Hansen (Oregon State University)

- ***Inner Mongolia Agricultural University Wood Science and Engineering Accrediting Educational Programs*** - Lihong Yao (Inner Mongolia Agricultural University), Dong Xing (Inner Mongolia Agricultural University), Zhe Wang (Inner Mongolia Agricultural University), Qin He (Inner Mongolia Agricultural University), Minghui Zhang (Inner Mongolia Agricultural University), Ximing Wang (Inner Mongolia Agricultural University)
- ***A Review for Education and Development Practices in Forest-Related Disciplines*** - Manoj Riyal (College of Forestry Ranichauri)
- ***Developing a Standardized Wood Education Framework to Promote Sustainable Wood Utilization*** - Jiyeon Yang (National Institute of Forest Science), Keon-Ho Kim (National Institute of Forest Science), Chang-Deuk Eom (National Institute of Forest Science), Su-Yeon Lee (National Institute of Forest Science), Joo-saeng Park (National Institute of Forest Science)
- ***Sustainable Design Education: A Path Towards Sustainable Design Education*** - Rico Ruffino (North Carolina State University)
- ***Mass Timber & Circular Economy: Preparing the Next Generation of Wood Industry Leaders*** - Allison Culver (Oregon State University), Mariapaola Riggio (Oregon State University), Eric Hansen (Oregon State University)

Session 8.2 Salon E - Sustainable Advanced Manufacturing of Value-added Wood Products through Innovative Pathways IV

~ Session Organizers - Daniel Saloni (North Carolina State University), Frederik Laleicke (North Carolina State University)

~ Moderators - Daniel Saloni and Frederik Laleicke

- ***PFAS-free Molded Pulp Trays: Effects of Pulp Type, Refining Level, and Cellulose Nanofibrils or Biowax Addition on Tray Performance*** - Jinwu Wang (USDA FS Forest Products Laboratory), Seongkyung Park (University of Maine), Colleen Walker (University of Maine)
- ***Design, Development, and Evaluation of Cellular Beams as Lightweight Alternatives to Glulam*** - Aadarsha Lamichhane* (Mississippi State University), Mostafa Mohammadabadi (Mississippi State University)
- ***Valorization of Mixed Municipal Solid Waste to Biochar*** - Harrison Appiah* (University of Idaho), Armando McDonald (University of Idaho), Ezra Bar-Ziv (Michigan Technological University), Jordan Klinger (Idaho National Laboratory)



2026 FOREST PRODUCTS SOCIETY INTERNATIONAL CONFERENCE

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- ***Pine Bark Tannins as a Viable Alternative to PRF for use in Printed Biocomposites*** - Shafaet Ahmed (University of Idaho), Armando McDonald (University of Idaho)
- ***Characterization of Nine Woods Thermally Treated Through the STYL+WOOD® Process by BIGonDRY Srl Italy*** - Ralph Viegelmann (Carolina Machinery Sales), Michele Bigon (BIGonDRY), Sonia Marchiori (BIGonDRY)
- ***Sustainable Design Education: A Path Towards Sustainable Design Education*** - Rico Ruffino (North Carolina State University)
- ***Mass Timber & Circular Economy: Preparing the Next Generation of Wood Industry Leaders*** - Allison Culver (Oregon State University), Mariapaola Riggio (Oregon State University), Eric Hansen (Oregon State University)

12:00 - 1:30 PM | LUNCH AND SWST BUSINESS MEETING

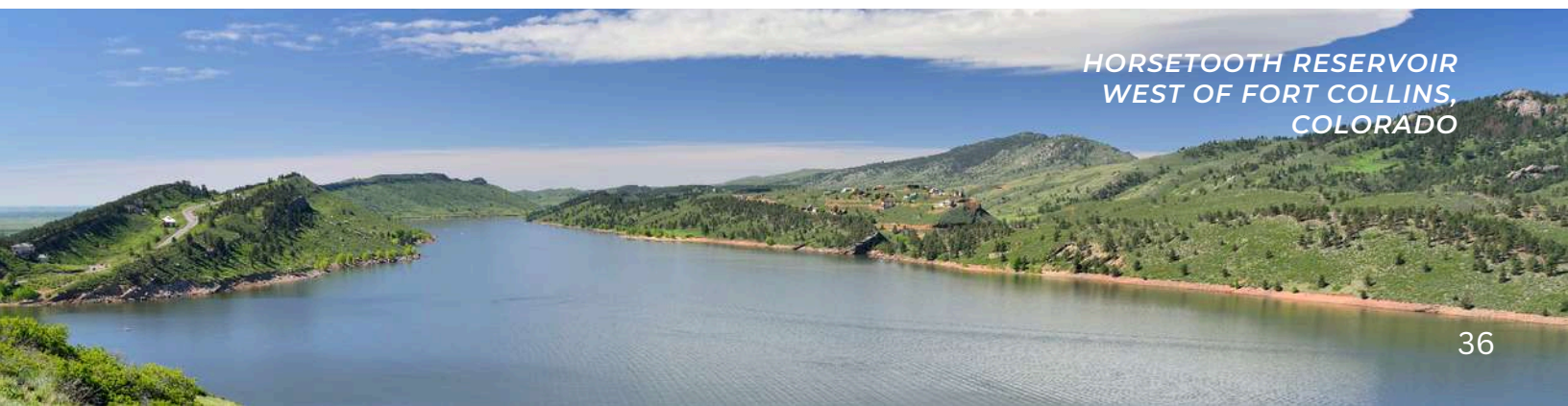
1:30 - 3:00 PM | CONCURRENT SESSIONS *denotes student

Session 9.1 Salon A-D - Trends in Education and Workforce Development Practices in Forest Products-related Disciplines II

~ Session Organizers - Gloria Oporto (West Virginia University), Nayomi Plaza (USDA FS Forest Products Laboratory)

~ Moderators - Gloria Oporto and Nayomi Plaza

- ***Outcomes of Woodisbest Promotion and Recruiting Activities*** - Eric Hansen (Oregon State University)
- ***Promotion of Sustainable Materials & Technology Undergraduate Program at the University of Maine*** - Ling Li (University of Maine), Mehdi Tajvidi (University of Maine), Xuefeng Zhang (University of Maine)
- ***Women in the Woods: A New Forestry Education and Outreach Program at Louisiana Tech University*** - Nan Nan (Louisiana Tech University), Heidi L. Adams (Louisiana Tech University)



HORSETOOTH RESERVOIR
WEST OF FORT COLLINS,
COLORADO

- **Innovative European Master's Program in Forestry, Wood Technology, Economics, and Sustainability: The Virtual Wood University Initiative** - Jaan Kers (Tallinn University of Technology), Guenter Berger (Salzburg University of Applied Sciences), Ilkka Tarvainen (LAB University of Applied Sciences), Hubert Speth (Baden-Wuerttemberg Cooperative State University), Erika Olofsson (Linnaeus University), Andrea Stuebner (Weihenstephan-Triesdorf University of Applied Sciences), Arnaud Besserer (Université de Lorraine), Bartlomej Mazela (Poznań University of Life Sciences), Vjekoslav Živković (University of Zagreb)
- **Augmented Reality-Assisted Equipment Setup & Safety Learning Tool** - Jörn Dettmer (University of British Columbia)
- **Experiences in Teaching and Developing Models for Mass Timber (Design and Construction), Curricula in Institutions of Higher Education** - Carlos Lee (University of Puerto Rico Mayagüez), Ingrid Arocho (Oregon State University), Francisco Maldonado (University of Puerto Rico Mayagüez), Christopher Papadopoulos (University of Puerto Rico Mayagüez)

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Session 9.2 Salon E - Sustainable Advanced Manufacturing of Value-added Wood Products through Innovative Pathways V

~ Session Organizers - Daniel Saloni (North Carolina State University), Frederik Laleicke (North Carolina State University)

~ Moderators - Daniel Saloni and Frederik Laleicke

- ***Evaluation of Polybutylene Succinate Composites Reinforced with Lignin and Milled Hemp Stalks*** Nnaemeka Ewurum and Armando McDonald Department of Forest and Fire Sciences, University of Idaho, Moscow, ID 83844-1132, USA - Nnaemeka Ewurum* (University of Idaho), Armando McDonald (University of Idaho)
- ***Enhancement of Thin Aspen Veneer Quality in Rotary Peeling*** - Heikko Kallakas (Tallinn University of Technology), Catherine Kilumets (Tallinn University of Technology), Kaur Tootsi (Tallinn University of Technology), Jaan Kers (Tallinn University of Technology)
- ***Enhancing the Mechanical Properties of Wood through Cellulose Nanocrystal Impregnation: A Sustainable Approach for Engineering Wood Quality*** - Dilpreet Bajwa (Montana State University), Ismat Ara (Montana State University), Nicole Stark (USDA FS Forest Products Laboratory), Joseph Jakes (USDA FS Forest Products Laboratory)
- ***Optimizing Key Parameters: Temperature, Equilibrium Moisture Content, and Pressure for Effective Wood Densification*** - Tolgay Akkurt* (Tallinn University of Technology), Anti Rohumaa (South Eastern Finland University of Applied Science), Jaan Kers (Tallinn University of Technology)
- ***Nondestructive Evaluation of Structurally Finger-Jointed Red Oak Lumber*** - Kayode Olaoye (USDA FS Forest Products Laboratory), Yunxiang Ma (Michigan Technological university), Xinfeng Xie (Michigan Technological university), Xiping Wang (USDA FS Forest Products Laboratory), Christopher Senalik (USDA FS Forest Products Laboratory), Randi Dodgson (Michigan Technological University), John Forsman (Michigan Technological University), Robert Ross (USDA FS Forest Products Laboratory)
- ***Bioinspired Self-Flowing Wood Chemical Treatment*** - Xuan Wang (University of North Texas), Sheldon Shi (University of North Texas)



3:00 - 3:30 PM | BREAK AND EXHIBITS

3:30 - 5:00 PM | CONCURRENT SESSIONS *denotes student

Session 10.1 Salon A-D - Trends in Education and Workforce Development Practices in Forest Products-related Disciplines III

~ Session Organizers - Gloria Oporto (West Virginia University), Nayomi Plaza (USDA FS Forest Products Laboratory)

~ Moderators - Nayomi Plaza and Gloria Oporto

- ***Understanding How Wildfire Hazard Reduction Treatments Across the Western US Will Affect Labor Markets*** - Jaana Korhonen (Oak Ridge Institute of Science and Education), Jeffrey Prestemon (USDA FS Southern Research Station)
- ***Assessment of the Competence Needs of Wood Science and Technology Program Graduates from the Perspective of Employers in the Saw Mill Industry*** - Kojo Afrifah (Kwame Nkrumah University of Science and Technology), Samuella Aggrey (Kwame Nkrumah University of Science and Technology), Vera Eshun (Kwame Nkrumah University of Science and Technology)
- ***Assessing the Characteristics of the Labour Market in the Forestry Sector in Ghana*** - Peter Kessels Dadzie (Kumasi Technical University), Bernard Effah (Akenten-Appiah Menka University of Skills Training & Entrepreneurial Development)
- ***Wood Science Education in the United States: A Comprehensive Review of Challenges, Strategies, and Future Directions*** - Mercy Ogunruku* (Mississippi State University), Elizabeth Stokes (Mississippi State University)
- ***Group Discussion led by Nayomi Plaza and Gloria Oporto***

Session 10.2 Salon E - Mass Timber Research and Innovation I

~ Session Organizers - Hongmei Gu (USDA FS Forest Products Laboratory), Daniel Hindman (Virginia Tech)

~ Moderators - Hongmei Gu and Nan Nan

- ***Flexural Properties of Homogeneous and Hybrid Cross-Laminated Timber*** - Levente Denes (West Virginia University), Balazs Bencsik (West Virginia University), Eduardo Sosa (West Virginia University), Curt Hassler (West Virginia University), Gloria Oporto (West Virginia University), Jonathan Norris (West Virginia University), Joseph McNeel (West Virginia University)



- ***Shear and Bending Properties of Homogeneous and Hybrid CLT Panels Fabricated from Low-value North American Hardwood Species*** - Oral Bencsik (West Virginia University), Levente Denes (West Virginia University), Joseph McNeel (West Virginia University), Curt Hassler (West Virginia University), Eduardo Sosa (West Virginia University), Gloria Oporto (West Virginia University), Jonathan Norris (West Virginia University)
- ***Quasi-static and Cyclic Testing of Half-Lap Cross-Laminated Timber Pegged Joints*** - Daniel Hindman (Virginia Tech), Parker Kraenzlein (Virginia Tech)
- ***Dimensional Stability of Green Assembled Dowel Laminated Timber*** - Paul Mayencourt (University of California Berkeley), Maximilian Pramreiter (BOKU University), Johannes Konnerth (BOKU University)
- ***A Wood-science-based Approach to Evaluate the Moisture Performance and Long-term Durability of Mass Timber*** - Natalia Farkas (USDA FS Forest Products Laboratory), Samuel Glass (USDA FS Forest Products Laboratory), Samuel Zelinka (USDA FS Forest Products Laboratory)
- ***Detection of Impaired Adhesive Bondline in CLT Panel Using Numerical and Experimental Modal Analysis*** - Vaclav Sebera (Mendel University in Brno), Patrik Nop (Mendel University in Brno), Jan Tippner (Mendel University in Brno)

THURSDAY, JUNE 19

7:30 - 8:30 AM | CONTINENTAL BREAKFAST

7:30 AM - 3:30 PM | REGISTRATION

8:30 - 10:00 AM | CONCURRENT SESSIONS *denotes student

Session 11.1 Salon A-D - Addressing Environmental and Social Challenges with Engineered Renewable Materials I

~ Session Organizers - Maria Soledad Peresin (Auburn University), Gloria Oporto (West Virginia University), Yucheng Peng (Auburn University), Lu Wang (University of Tennessee)

~ Moderator - Maria Soledad Peresin

- ***Prediction of Strength and Stiffness of Glued Laminated Bamboo Beams Based on Constituent Properties*** - Daniel Hindman (Virginia Tech), Jonas Hauptman (Virginia Tech), Sushant Dahal (Virginia Tech)



- ***Biocarbon from Forest Feedstocks for Lead ion Adsorption in Aqueous Solutions*** - Peng Yucheng (Auburn University), Thomas Elder (USDA Forest Service)
- ***Woody Biochar for PFAS Adsorption in Agricultural Lands to Reduce their Bioaccumulation in Vegetable Crops*** - Ling Li (University of Maine), Sandesh Thapa (University of Maine)
- ***Evaluation of Recovery Rate Determinants for Eucalyptus globulus in Small-Scale Sawmills: A Case Study in Addis Ababa, Ethiopia*** - Moti Kenise (Federal Technical and Vocational Training Institute)
- ***Effect of the Properties of the Hybrid Molded Fiber Substrate on the Effectiveness of CNF Coatings*** - Nabanita Das* (University of Maine), Islam Hafez (Oregon State University), Douglas Bousfield (University of Maine), Mehdi Tajvidi (University of Maine)
- ***Eliminating Oil and Plastic Pollution in Marine Bearings: Assessing Lignum Vitae's Environmental Impact – Part 1: Availability, Material Properties, and Pollution Reduction*** - Daniel Westerbaan (Hydro Tech Inc), Dean Breton (Hydro Tech Inc), Michael Paciocco (Hydro Tech Inc), Marty Sdao (Hydro Tech Inc)



Session 11.2 Salon E - Mass Timber Research and Innovation II

~ Session Organizers - Hongmei Gu (USDA FS Forest Products Laboratory), Daniel Hindman (Virginia Tech)

~ Moderators - Hongmei Gu and Nan Nan

- ***Hygrothermal Analysis of Hybrid Cross-Laminated Timber Made of Thermally Modified and Unmodified Wood*** - Abasali Masoumi* (Virginia Tech), Brian Bond (Virginia Tech), Daniel Hindman (Virginia Tech), Georg Reichard (Virginia Tech), Joseph Loferski (Virginia Tech)
- ***From Small-Diameter Trees to Arched Corrugated Panels and Engineered Beams*** - Arun Kuttoor Vasudevan* (Mississippi State University), Mostafa Mohammadabadi (Mississippi State University)
- ***Thin Hardwood CLT – Product Development and Joinery Evaluation*** - Chih Cheng Chen* (Purdue University), Eva Haviarova (Purdue University)
- ***Life Cycle Assessment of Hardwood Cross-Laminated Timber Production in the Eastern United States*** - Jinghan Zhao* (North Carolina State University)
- ***Effect of Water Repellents on Water Intrusion in Cross-Laminated Timber*** - Diego Ramirez* (Oregon State University), Arijit Sinha (Oregon State University), Jeffrey Morrell (Oregon State University)

10:00 - 10:30 AM | BREAK AND EXHIBITS

10:30 AM - 12:00 PM | CONCURRENT SESSIONS *denotes student

Session 12.1 Salon A-D - Addressing Environmental and Social Challenges with Engineered Renewable Materials II

~ Session Organizers - Maria Soledad Peresin (Auburn University), Gloria Oporto (West Virginia University), Yucheng Peng (Auburn University), Lu Wang (University of Tennessee)

~ Moderator - Maria Soledad Peresin

- ***Role Of Protein Mobility In Bond Formation*** - Christopher G. Hunt (USDA FS Forest Products Laboratory), Linda Lorenz (USDA FS Forest Products Laboratory)
- ***Nanocellulose Reinforced PRF Resin*** - Japneet Kukal* (University of Idaho), Armando McDonald (University of Idaho)
- ***Impact of Catalyst and Oxidant Levels in a TEMPO Oxidation Process on the Generation of Cellulose Nanofibers*** - Jaegyoun Gwon (National Institute of Forest Science)

- **Enhancing Sustainability in Additive Manufacturing: Bio-Based Phenol-Resorcinol-Formaldehyde Resins for Construction Applications** - Laura Vanessa Alvarez Marin* (Auburn University)
- **High-performance Hempcrete for Building Insulation** - Munkaila Musah (University of Massachusetts)
- **Utilizing Hemp Hurds Fiber in Extrudable Thermoset Composites** - Sodiq Yusuf* (University of Idaho), Michael Maughan (University of Idaho), Armando McDonald (University of Idaho)

Session 12.2 Salon E - Mass Timber Research and Innovation III

~ Session Organizers - Hongmei Gu (USDA FS Forest Products Laboratory), Daniel Hindman (Virginia Tech)

~ Moderators - Nan Nan and Hongmei Gu

- **Nondestructive Evaluation of Treated Southern pine, Douglas-fir, and Mixed Hardwood Glulam** - Aleria Story* (Mississippi State University), Laya KhademiBami (Mississippi State University), Colin McCown (Mississippi State University), Rubin Shmulsky (Mississippi State University)
- **Nondestructive Evaluation of CLT from Downed Pine Timber** - Sona Azad* (Mississippi State University), Laya KhademiBami (Mississippi State University), Iris Montague (USDA FS Northern Research Station), Kozma Naka (Alabama A&M University), Troy Bowman (Alabama A&M University), Rubin Shmulsky (Mississippi State University)
- **Advancing Cross-laminated Timber Connections: Evaluating Glued-in Rod Technology** - Reyyan Okutan* (Virginia Tech), Joseph Loferski (Virginia Tech), Daniel Hindman (Virginia Tech)
- **Predicting Size Effect in Veneer-Based Structural Joists Based on Small-Sample Test Results** - Samuel Donkor* (Oregon State University), Lech Muszynski (Oregon State University), John Nairn (Oregon State University)
- **Advancing Resilience-Based Design: Insights from Full-Scale Testing of Tall and Midrise Mass Timber Buildings** - Prashanna Mishra* (Colorado State University), John Van de Lindt (Colorado State University), Shiling Pei (Colorado School of Mines), Andre R. Barbosa (Oregon State University), Steve Pryor (Simson Strong-Tie), Jeffery Berman (University of Washington), Barbara Simpson (Stanford University), Keri L Ryan (University of Nevada Reno), Arijit Sinha (Oregon State University), Patricio A. Uarac P. (Oregon State University), Morgan McBain (Stanford University), Steven Kontra (Oregon State University), Tanner Field (Oregon State University)

12:00 - 1:30 PM | LUNCH AND FPS BUSINESS MEETING

1:30 - 3:00 PM | CONCURRENT SESSIONS *denotes student

Session 13.1 Salon A-D - General (other topics), I

~ Session Organizers - Joseph Jakes (USDA FS Forest Products Laboratory), Francesco Negro (University of Torino)

~ Moderators - Francesco Negro and Joseph Jakes

- ***Influence Of Drying Temperature On The Mechanical Properties Of Some Tropical Wood Species*** - Charly Nyobe (Advanced Teachers Training College for Technical Education of Douala), Nicolas Stéphane Nyobe (University of Yaounde)
- ***Hemicellulose Influence on Set-Recovery and Densification of Veneer through Hot Water Extraction*** - Catherine Kilumets* (Tallinn University of Technology), Heikko Kallakas (Tallinn University of Technology), Junyong Zhu (USDA FS Forest Products Laboratory), Christopher G. Hunt (USDA FS Forest Products Laboratory), Jaan Kers (Tallinn University of Technology)
- ***Hardwood-Based Composites with Flexible Polyurethane Adhesive Joints*** - Klaudia Śliwa-Wieczorek (Cracow University of Technology), Arkadiusz Kwiecień (Cracow University of Technology), Jaka Pečnik (InnoRenew CoE), Paweł Szeptyński (Cracow University of Technology), Matthew Schwarzkopf (InnoRenew CoE)
- ***Durability of Plantation Hinoki*** - Elizabeth Israel* (Oregon State University), Jeffrey Morrell (Oregon State University), Arijit Sinha (Oregon State University), Patricia Vega (Oregon State University), Jed Cappellazzi (Oregon State University), Sato Yuichi (Japan Lumber Inspection & Research Association)
- ***Axial Stem Position and Age Variations in Density and Tissue Proportions in Plantation Teak Wood*** - Peter Kessels Dadzie (Kumasi Technical University), Bernard Effah (Akenten-Appiah Menka University of Skills Training & Entrepreneurial Development), Paul Benedict Inkum (Kumasi Technical University), Stephen Inyong (Sunyani Technical University)



**DOWNTOWN FORT
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- **Valorisation of Fire-affected *Tectona grandis* from Ghana for industrial Utilisation**
 - Prosper Mensah* (Forestry Research Institute of Ghana), Isaac Buckman (Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development), Francis Bih (Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development), James Amponsah (Forestry Research Institute of Ghana), Rodolfo Rafael Melo (Universidade Federal Rural do Semiárido), Alexandre Santo Pimenta (Universidade Federal do Rio Grande do Norte), Kweku Antwi (Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development)



Session 13.2 Salon E - Mass Timber Research and Innovation IV

~ Session Organizers - Hongmei Gu (USDA FS Forest Products Laboratory), Daniel Hindman (Virginia Tech)

~ Moderators - Dan Hindman and Levente Denes

- ***Exploring the Climate Impact of the Building Construction Phase: An LCI-Based Comparison of Mass Timber and Reinforced Concrete Buildings*** - Baowen Zhang (SUNY), Paul Crovella (SUNY)
- ***Comparative LCA of Utah's First Large-scale Mass Timber Building, Baltic Pointe, with a Steel Alternative*** - Jacob Gines (Mississippi State University), Abby Williams (Mississippi State University)
- ***Comparative Whole Building Life Cycle Assessment on the Four Framing Systems of the Bakers Place using Tally LCA Tool*** - Hongmei Gu (University of New Brunswick), Nadia Zahabi (University of New Brunswick), Meng Gong (University of New Brunswick), Janet Blackadar (University of New Brunswick)
- ***Collaboration and Networking in Europe Through the Holistic Design of Taller Timber Buildings — COST Action HELEN*** - Amy Simmons (InnoRenew CoE)
- ***Characterization of Monolithic Vertical Wall Connections for Veneer-Based Mass Timber Walls*** - Ian Morrell (Tennessee Technological University), Arijit Sinha (Oregon State University), Daniel Cheney (Boise Cascade Company), Daniel Way (Boise Cascade Company)
- ***Mass Timber Alternatives in Construction with Flexible Adhesives Joints*** - Arkadiusz Kwiecień (FlexAndRobust Systems Sp. z o.o.), Klaudia Śliwa-Wieczorek (Cracow University of Technology), Urša Blumauer (Požarni laboratorij ZAG), Nataša Knez (Požarni laboratorij ZAG)

3:00 - 3:30 PM | BREAK AND EXHIBITS

3:30 - 5:00 PM | CONCURRENT SESSIONS *denotes student

Session 14.1 Salon A-D - General (other topics), II

~ Session Organizers - Joseph Jakes (USDA FS Forest Products Laboratory), Francesco Negro (University of Torino)

~ Moderators - Francesco Negro and Joseph Jakes

- ***Retrofit Analysis of an Educational Building in South Korea with CLT Walls for Energy Efficiency and Sustainability*** - Ji Hun Park* (Yonsei University), Yujin Kang (Yonsei University), Seong Taek Kang (Yonsei University), Sumin Kim (Yonsei University)
- ***Carbon Mitigation and Energy Efficiency of Hybrid Cross-Laminated Timber Community Center Buildings*** - Yujin Kang (Yonsei University), Ji Hun Park (Yonsei University), Young Uk Kim (Yonsei University), Sumin Kim (Yonsei University)
- ***Investigating Information Sharing Networks in the Western Hardwood Sector*** - Victoria Diederichs* (Oregon State University), Mindy Crandall (Oregon State University), Eric Hansen (Oregon State University)
- ***Investigating Application of Ethiopian Traditional Styles on Wooden Artifacts and Interior Decoration*** - Deresse Ketema* (Federal Technical and Vocational Training Institute)
- ***Assessment of *Panicum maximum* as Substitute for Wood in Pulp and Paper Production*** - Kojo Afrifah (Kwame Nkrumah University of Science and Technology), Vera Eshun (Kwame Nkrumah University of Science and Technology), Samuella Aggrey (Kwame Nkrumah University of Science and Technology)
- ***Impact of Economic Challenges in Nigeria on Wood Quality and Timber Grading from 2015 – 2023 at Bodija Plank Market, Ibadan, Nigeria*** - Olusola Samuel Areo (Adekunle Ajasin University)

Session 14.2 Salon E - Mass Timber Research and Innovation V

~ Session Organizers - Hongmei Gu (USDA FS Forest Products Laboratory), Daniel Hindman (Virginia Tech)

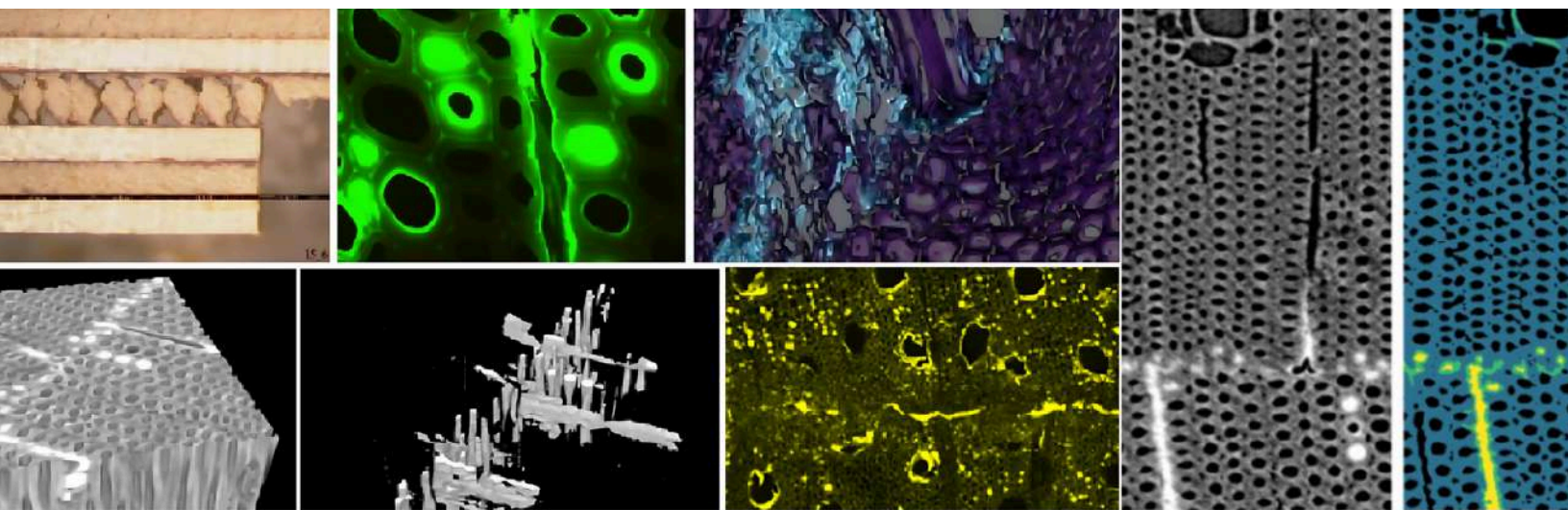
~ Moderators - Dan Hindman and Levente Denes

- ***Reuse Potential of Screw Connections in Southern Pine Cross-Laminated Timber*** - Ian Morrell (Tennessee Technological University), Ellie Cauthen (North Carolina State University), Arijit Sinha (Oregon State University)



- ***Building Colorado's Mass Timber Economy*** - Will Lepry (Colorado Mass Timber Coalition)
- ***Key Insights from Whole Building Life Cycle Assessment (WBLCA), of the World's Tallest Hybrid Concrete and Mass Timber Apartment Building*** - Hongmei Gu (USDA FS Forest Products Laboratory), Marco Lo Ricco (USDA FS Forest Products Laboratory)
- ***Cursory Review of Funded Research Related to Mass Timber*** - Tahar Messadi (University of Arkansas), Mahboobeh Hemmati (University of Arkansas), Moein Hemmati (University of Arkansas), Hongmei Gu (USDA FS Forest Products Laboratory)
- ***FPS Mass Timber and Engineering Design Technical Interest Group (TIG), meeting led by Daniel Hindman and Hongmei Gu. All are welcome.***

5:00 - 7:00 PM | BANQUET



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