

Council on Forestry Welcomes New Members and Tours the USDA Forest Products Laboratory

The Wisconsin Council on Forestry welcomed two new members, Senator Jamie Wall and Representative Lori Palmeri, at the meeting held on January 28 at the USDA Forest Products Laboratory in Madison. Senator Wall represents Senate District 30 that includes Green Bay, Ashwaubenon and De Pere. The Senator is a member of the Committee on Insurance, Housing, Rural Issues and Forestry; a member of the Joint Committee on Information Policy and Technology; and a member of the Joint Legislative Council. Representative Palmeri represents Assembly District 54 that includes Oshkosh. Rep. Palmeri is a member of the following committees: Committee on Environment, Committee on Forestry, Parks and Outdoor Recreation, and the Committee on Local Government. Both Senator Wall and Rep. Palmeri are both involved with environmental and forestry issues and look forward to working with the Council.

The Council said goodbye to Jennifer Youngblood, the Forest Supervisor of the Chequamegon/Nicolet National Forest who is moving to Alaska to accept the position of Forest Supervisor of the Chugach National Forest. Jennifer represented the USDA Forest Service on the Council. Chair Tom Hittle thanked Jennifer for her service on the Council and everyone present wished her well with her new position. The new Forest Supervisor will have a place on the Council when hired. Until then, the Forest Service will send a representative to the meetings.

Meeting topics included:

- Updates on the Council actions supporting the State Forest Action Plan
- Council involvement with concerns about the age distribution of red pine and oak in the state
- Status of Council input to the state biennial budget for 2025-2027
- Update on the initiative to support healthy forests
- Report on state timber harvest volumes
- Update on plans and activities from the UW-SP Wisconsin Institute for Sustainable Technology by Paul Fowl, Executive Director

More details on the meeting topics can be found in the meeting minutes in the meeting materials page of the Council website.

The final part of the meeting involved a discussion of the Forest Products Lab (FPL) projects and priorities while the staff hosted a tour of the facilities. FPL staff leading the tour included Cynthia West, Station Director; Kenneth Zwick, Assistant Director; William Martin, Assistant Director; and Alicia King, Assistant Director of Communications.

The lower level of the main building contains the wood shop. Jose Gonzales, a carpenter in the shop explained how the shop makes the wood parts in the size and configuration requested by researchers for projects.



Jose Gonzales shows the group a sample of wood made to specifications required for a research project.

A short trip to the Centennial Research Facility was a welcome chance to get outside during the unusual January weather, it was sunny and warm, about 40° F. In the facility, Cynthia West turned the discussion to cross-laminated timber (CLT) testing at the FPL to see if the materials, including new species and grades, comply with existing building codes for mass timber buildings. A piece of equipment called a strong floor device can apply up to 3,000 pounds per square inch of pressure to test the structural strength of CLT material. Other tests used on CLT material includes a three-hour fire, moisture and seismic simulators. Another goal of the FPL is to fire-harden buildings with a covering that prevents heat building up inside the structure.

Wood testing is done at the FPL for private entities and government agencies within the United States. They do not test wood for other countries but will test imported wood that is used in the US. The overall need for wood testing is too large for the FPL to complete all the testing required so they partner and network with universities and other organizations from around the country in collaborative research projects.

It is important for wood-using industries to turn their wood waste into a value stream instead of a waste removal cost. One of the projects the FPL is investigating is creating

wood waste into biochar that can be used in different configurations. Lignin is 18-22% of wood and is not used in the wood pulping process for manufacturing paper. By combining lignin with biochar, the FPL can make lightweight filters for use in water, air or soil filtering to remove heavy metals, PFAS and other impurities. In addition to the filtering properties, the composite doesn't degrade, is lightweight and has a low-thermal transfer rate, making it an excellent, non-flammable insulation.



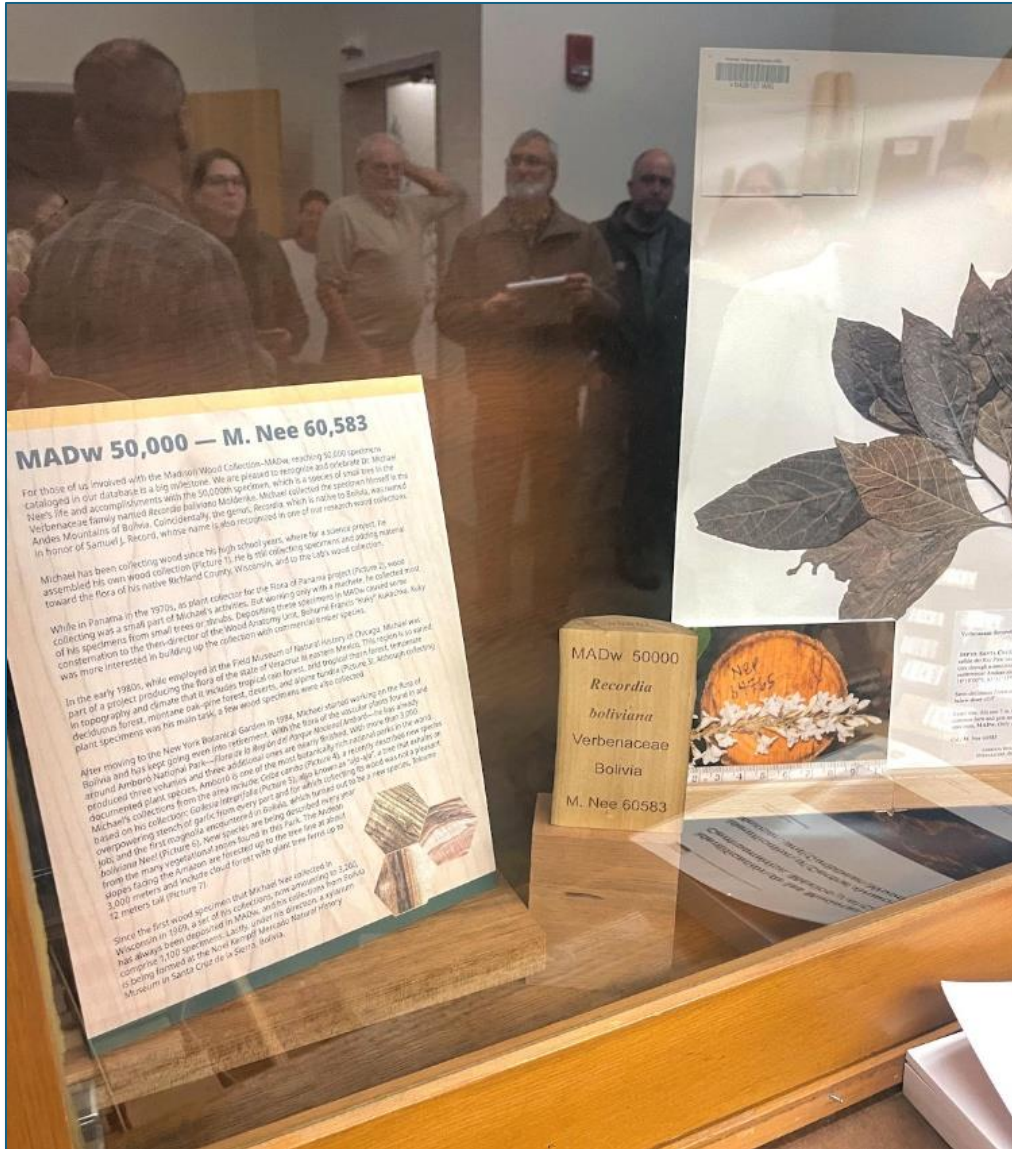
Cynthia West explaining the testing process for cross-laminated timber

Nanocellulose is another cutting-edge technology the FPL is developing. The nanoparticles are smaller than light wavelengths so they make clear air and moisture barriers that could replace plastics in food containers. Other properties of nanocellulose includes screening harmful ultraviolet rays from the sun (potential sunscreen use) and using in vehicle tires to increase the life by reducing wear.

Having the FPL in Wisconsin gives the state and the US a competitive advantage in the global wood products industry. One problem identified with new technologies is referred to as the chicken/egg syndrome. If there is not a market for emerging technology, there will not be investment, and if there is no investment, there will not be a market. Partnering with industry can help with transferring technology advances into practical use.

The tour group viewed a fascinating device called the CARWASH (Chamber for Analytic Research on Wall Assemblies exposed to Simulated Weather). It is a large chamber where a fully constructed wall is placed to test the wall's resistance to rain and wind up to 25 mph. The exposure can last from a day to several months and data gathered is turned into mathematic models to simulate different conditions. This is the only CARWASH of its size in the US.

The final stop was at the Center for Wood Anatomy Research. The mission of the center is to "combine state-of-the-art knowledge and techniques in botany and wood anatomy in the search for new approaches and improvements to wood identification and to accumulate and make known information on the anatomical and other characteristics of woods that may affect their utilization potential." Center staff member, Rafael Arevalo, covered the history and highlights of the Center. It has the largest research wood collection (xylarium) in the world with over 103,000 samples. The overall collection is made of two different collections; the Madison (MADw) Collection and the Samuel J. Record (SJRw) Collection. The FPL can identify wood samples for US citizens, according to their website, last year they identified 1,300 wood samples. In addition, the Center developed wood ID manuals for US Customs agents to help them identify wood that might be prohibited from international trafficking.



Council on Forestry members and guests listening to Rafael Arevalo talk about the Center for Wood Anatomy Research are seen in a reflection of the glass enclosed display case in the center.

The Council thanks the staff of the FPL for providing an interesting and informative tour of the facilities and research currently in progress.