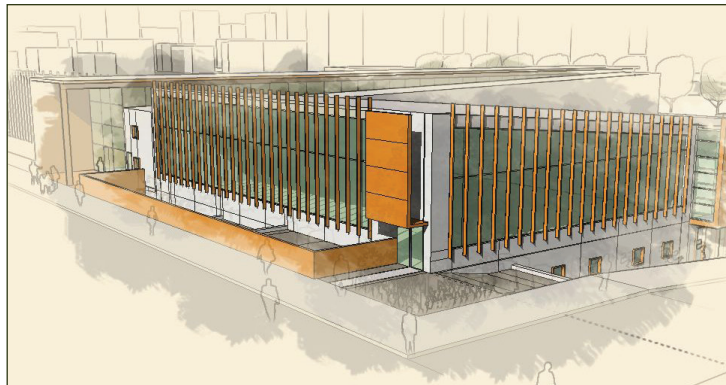


Business Incubator Partnership Program

USDA Forest Service Forest Products Laboratory

Forest Products
Laboratory
1910-2010

Since 1910, the USDA Forest Service's Forest Products Laboratory in Madison, Wisconsin, has been committed to extending the Nation's forest resources through a strategy of wise use. To encourage innovation in forest products research, the Forest Products Laboratory (FPL) has long entered into cooperative agreements with private businesses. In the past, however, products developed under these agreements had to be destroyed after testing. Under expanded authority from the Federal government, a new Business Incubator Partnership Program now allows for the commercial sale of these products for market-testing purposes.



Centennial Research Facility

Private start-ups or other entities needing expanded production resources can rent space and equipment at the FPL to pilot-test new products or process innovations. By developing product prototypes without excessive overhead costs, and now able to sell these products in limited quantities, business incubator associates can benefit more than ever by partnering with the FPL.

Business Incubator partners will have access to FPL scientists and technical staff. In some cases, joint venture agreements for collaborative research are also appropriate. FPL scientists are always looking to explore emerging research needs and apply new research tools. The Business Incubator environment provides many opportunities for industry partners to move research into the marketplace. These cooperative efforts also have the potential to strengthen local economies by creating new businesses and employment opportunities upon implementation in the home region of partnering businesses.

A proposed 50,000-square-foot biorefinery pilot plant is also on the horizon at the FPL. This Bioenergy Innovation Platform would provide research and pilot-plant space for development, start-up, and evaluation of technologies for commercially viable conversion of biomass to alternative fuels, bio-based chemicals, and related products.

The FPL's new Centennial Research Facility (CRF), an 87,000-square-foot multi-use laboratory, will be the primary

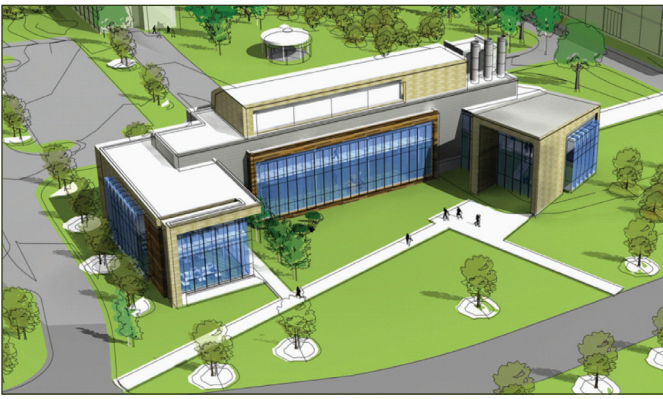
research facility for new cooperative partnerships. The CRF is home to the Engineering Mechanics and Remote Sensing Laboratory (EMRSL), the Durability & Wood Protection laboratories, and the Engineered Composite Sciences testing and production space.

The EMRSL conducts physical and mechanical testing and evaluation on a wide range of materials and building systems—from houses to transportation structures—to determine their mechanical and material properties. Testing involves samples ranging from toothpick-sized to 50 feet long. Tests can be static (simulating snow loads or dead loads) or dynamic (simulating seismic, fatigue, and wind loads). A strong floor and wall system in the EMRSL gives researchers the ability to apply loads from multiple directions and allows full-scale testing of three-dimensional structures such as wood-framed building mock-ups up to 20 feet tall.

The Durability & Wood Protection unit works to extend the available timber supply through improved building design, advances in low-toxicity wood preservatives, and improvements in fire safety. One of this unit's newest pieces of research equipment in the CRF is a unique weatherization chamber for studying various weather conditions on wall assemblies in a controlled environment.

The Engineered Composite Sciences unit seeks to understand relationships between materials, process, and performance in engineering biocomposites that benefit users while promoting the sustainability of both virgin and recycled forest resources. The composite laboratories include presses and extruders of various sizes for production of wood- or natural-fiber-based composites as well as wood-plastic composite products.

The amendment to Federal law allowing for more extensive cooperative agreements was proposed by Senator Russ



Proposed Bioenergy Innovation Platform

Feingold (D-WI). This amendment will help government facilities such as the FPL serve as effective business incubators. Upon passage of this amendment, Senator Feingold stated that his intentions have been “all about making the federal government a better partner for businesses and others in the private sector.”

The FPL Business Incubator and Partnership Program is a new and exciting opportunity. This program will further develop innovative solutions to sustainable energy and natural resource challenges through partnership with private businesses and the use of Federal science resources. In the spirit of a new century of service to the Nation, we welcome all inquiries from viable business partners. Please contact us for more information on the FPL Business Incubator Partnership Program.

Unique Features of the FPL Centennial Research Facility

EMRSL:

Strong floor

- 50 by 30 feet with anchor points at 2 feet on center – 336 anchor points total
- 75,000 pounds pull-out capacity at each anchor point
- Compressive strength of strong floor: 4,000 pounds per square foot

Strong wall

- 10 H-shaped blocks, 10 feet on a side and 2 feet high, stacking to 20 feet high total
- 13 holes in each H block for threadbar to fasten to strong floor anchor points

Durability & Wood Protection

- Five pilot-scale pressure treatment cylinders
- Three work tanks
- Water- and oil-based chemical treatments
- Weatherization chamber for testing of full-scale wall assemblies under a variety of weathering conditions, such as intense rainfall, wind, infrared radiation, heat, and humidity

Engineered Composites Sciences

- State-of-the-art laboratory weathering apparatus
- FTIR spectrometer
- Modular system with torque rheometer, which can be attached to a mixer or extruder with instrumented capillary dies to obtain information on matrix, fillers, and additives
- Micro-processing system to produce small quantities of polymer composites, including nanocomposites
- High shear microfluidizer processor

Other Units within FPL

- Analytical Chemistry & Microscopy Laboratory
- Economics & Statistics Research
- Engineering Properties of Wood, Wood Based Materials and Structures
- Fiber & Chemical Sciences Research
- Institute for Microbial & Biochemical Technology
- Paper Test Laboratory
- Performance Enhanced Biopolymers
- State and Private Forestry Technology Marketing Unit

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