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## Technology Research Center Opens in Old Town



The University of Maine's new Technology Research Center (TRC), which will connect private industry with UMaine researchers in the Forest Bioproducts Research Institute (FBRI) in order to validate, demonstrate and help commercialize developing fuel, chemical and advanced material technologies from forest bioproducts at an industrially relevant scale, opened Monday, June 18 in Old Town, Maine.

TRC serves as a one-stop shop for processing and analysis of technologies. The 40,000-square-foot, high-bay facility, located on the grounds of Old Town Fuel & Fiber, features state-of-the-art process control and process information systems.

"Today's opening is an exciting step forward for new technologies that have the potential to revitalize Maine's economy," said U.S. Rep. Mike Michaud, who was among the speakers during the morning ceremony in the TRC lobby. "That's what it's all about, revitalizing Maine's economy and finding new ways of doing things, and this center is going to be at the center of that. The research and production performed here not only have the potential to create new economic opportunities, but to help Mainers reduce our dependence on foreign oil, which has become extremely painful, particularly in Maine during the winter months."

Many of the projects already in development in the lab and ready for pilot trials are the result of public-private partnerships, with investment from federal agencies such as the U.S. Department of Energy, U.S. Defense Logistics Agency and National Science Foundation, and collaboration with private companies, including Maine paper companies, land management companies and small entrepreneurial start-ups.

"(This is a) remarkable partnership (among) the university, private industries, our municipalities, our federal and state delegation," University of Maine President Paul Ferguson said. "When they come together in this kind of public-private

partnership, it can mean great things for Maine and great things for the nation.”

Other speakers during the ceremony were University of Maine System Chancellor James Page; John Wolanski, president of the UMaine-based Pulp and Paper Foundation; Steven Schley of the FBRI Advisory Board and president of Pingree Associates; Doug Ray, spokesperson and legislative liaison of the Maine Department of Economic and Community Development; and Susan MacKay, president of Cerahelix, which is one of several private companies eager to advance its work at TRC.

FBRI was created in 2006 with a \$6.9 million research infrastructure improvement grant from the National Science Foundation’s Experimental Program to Stimulate Competitive Research (NSF EPSCoR) and a 50 percent match (\$3.45 million) from UMaine through the Maine Economic Improvement Fund, the state’s appropriation for university R&D, bringing the total investment to \$10.35 million. At the time, it was the largest NSF EPSCoR grant ever awarded to UMaine.

The TRC facility and equipment were capitalized in 2009 with a \$4.8 million grant from the Maine Technology Asset Fund (MTAF). The TRC builds on the track record of the Pulp and Paper Process Development Center (PDC) established on campus in Jenness Hall in 1987. The TRC is UMaine’s companion commitment to the emerging field of forest bioproducts, for the next 25 years and more.

The TRC has the ability to handle any cellulosic feedstock, from forest residue to switchgrass to municipal solid waste. From those feedstocks, companies could experiment on dozens of bioproducts, including precursors for drop-in fuels such as gasoline, diesel and jet fuel; nanocellulose fibers and carbon fibers; and high-value industrial chemical byproducts and coproducts.

The facility is capable of biomass size reduction and screening through physical processes; biomass pretreatment through chemical processes; extraction of sugars and fibers for pulping; fermentation, distillation, liquid-liquid extraction, and microfiltration to separate complex liquids; and biomass pelletizing. The FBRI analytical capabilities available to TRC include chemical and physical testing for pilot-scale campaigns, gas and liquid chromatography, atomic and molecular spectroscopy, wet chemical characterization, analytical method development, and in-process and final product material characterization.

MacKay said the Orono-based Cerahelix, which has received R&D funding for a new filtration nanotechnology to make more efficient the ability to take sugars from biomass, is ready to scale up production and testing of its technology.

“We have a process technology in hand and we’ve been able to leverage this for the R&D funds but what’s really difficult for a company like ours is you can’t do this type of processing in your garage,” she said. “You need access to a facility and access to equipment you simply cannot have access to in a small start up. Partnering with the University of Maine has really enabled us to have access to the type of equipment which we can’t afford on our own or build in a small laboratory up in Orono.”

For more information about FBRI, go to [forestbioproducts.umaine.edu/](http://forestbioproducts.umaine.edu/).

Prepared statements from Maine’s Congressional delegation:

“I am delighted to see the expansion of the University of Maine Forest Bioproducts Research Institute. I have worked hard to secure federal dollars for the important work that you have done to help bring Maine to the forefront in the development of forest-based bioproducts. This new Technology Research Center will enable you to expand and further your efforts to create jobs, build new businesses, and train future scientists. Your hard work and dedication to excellence are to be commended,” U. S. Sen. Susan Collins said.

“At a time when high energy costs continue to burden Maine families, today’s grand opening of the Maine Forest Bioproducts Research Institute’s new Technology Research Center signals a landmark day for research into utilizing Maine’s forests for energy solutions. As the most heavily forested state in the United States, Maine has a tremendous asset that has powered our State for generations and this facility will continue to advance Maine’s efforts to take advantage of this resource to expand our economy. Collaboration between researchers and the business community is critical in competing in a modern economy and I am encouraged that this University of Maine facility, through the generosity of Old Town Fuel and Fiber, will further expand our united effort to develop and commercialize products that will continue to power our forest products industry for a new generation,” U.S. Sen. Olympia Snowe said.

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