

Forest Concepts and University of Washington Partner on Bioenergy Technology

For Immediate Release

Auburn, WA – January 10, 2011 - Scientists and engineers at the University of Washington's biofuels and bioproducts laboratory in the School of Forest Resources are partnering with Forest Concepts, LLC, a bioenergy feedstock technology developer in Auburn, Washington, to evaluate the biochemical conversion efficiency of a new kind of woody biomass feedstock particle. The \$80,000 grant to the UW is a subcontract under Forest Concepts' Small Business Innovation Research contract with the U. S. Department of Energy.

Forest Concepts is optimizing the size and physical properties of woody biomass feedstocks to improve yields and reduce energy consumption for production of second-generation cellulosic biofuels. The UW laboratory has a world-class team of researchers working on the biochemical pathways to convert cellulosic feedstocks into ethanol and other liquid biofuels.

Feedstock handling and processing account for much of the energy consumed in biofuels facilities. For example, more than a thousand horsepower may be used just to grind biomass into the small particles needed for bioconversion. Using steam explosion to further open biomass materials can improve ethanol yield, but the technology is slow and both capital and energy intensive. Forest Concepts' innovative biomass particles can be produced using 2/3 less energy; they also have properties that will potentially reduce the time needed for steam explosion treatment and increase ethanol yields.



Photo: Handful of Crumbles™ precision wood particles (Forest Concepts)

Renata Bura, assistant professor of natural products chemistry and Rick Gustafson, professor of bioresource science, will lead the project for the UW, using the laboratory's pretreatment, fermentation and analytical capabilities, including a newly installed "steam gun" for researching the steam explosion treatment process.

"The focus on creating renewable sources of energy continues to gain momentum at the UW," said Gustafson. "This innovative project is part of an expanding body of UW research in bioresource science and engineering. By using plant biomass that is either of low value for other products or that can be grown on marginal land with minimal energy inputs, our laboratory's goal is to produce biofuels and bioproducts that are both environmentally and economically sustainable.

"We are looking forward to working with the research team on this project," said James Dooley, Forest Concepts chief technology officer." The UW lab is uniquely qualified to work with our engineers on biochemical conversion of woody materials to biofuels. We expect that the knowledge and data gained from our cooperative research will improve the net energy balance for second generation biofuels as well as reduce the capital for future facilities."

Mike Perry, CEO, adds, "During these difficult financial times for universities, Forest Concepts is pleased to support research in the School of Forest Resources at the UW."

About Forest Concepts: Forest Concepts LLC is a wood-based materials research and development company that was formed in 1998 to apply sound science and disciplined design to solve important societal problems. The firm is a nationally recognized leader in the development and commercialization of new uses for smallwood and biomass from urban sources and as co-products of forest management and wildfire protection in rural areas.

Forward Looking Statements:

This press release contains forward-looking statements, including, without limitation, statements related to Forest Concept's products and its other research and development programs. These forward-looking statements are based upon Forest Concept's current expectations. Forward-looking statements involve risks and uncertainties. Forest Concept's actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of these risks and uncertainties. You should not place undue reliance on these forward looking statements, which apply only as of the date of the press release. Forest Concepts expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in its expectations with regard thereto or any change in events, conditions or circumstances on which any such statements are based.

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