



July 31, 2008

Bioprospecting for Improved Methods of Biofuel Production

Baltimore, MD— UMBI has received a \$575,000, three-year subcontract award from the University of California at Berkeley to develop more efficient ways to convert lignocellulose to biofuels such as ethanol and butanol. The subcontract is part of a multifaceted, collaborative research and development effort designed to improve the efficiency of biofuel production. These efforts are led by three Principal Investigators, including Dr. Frank T. Robb of UMBI's Center of Marine Biotechnology, Dr. Douglas S. Clark and Dr. Harvey W. Blanch of the Chemical Engineering Department at Berkeley.

Lignocellulose contains cellulose and lignin, the two most abundant biopolymers on earth. They are found in municipal paper waste, wood residues from sawmills and paper mills, dedicated energy crops such as woody grasses, and agricultural wastes such as corn stover. Conversion of lignocellulose to environmentally friendly fuels such as ethanol represents a major component of efforts to prevent climate changes such as global warming.

Dr. Robb will lead an innovative research program designed to improve the efficiency of conversion of the cellulosic biomass to biofuels. Making use of microorganisms that thrive at very high temperatures in natural hot springs, the research team will be "bioprospecting" for new enzymes that will allow the conversion to take place at high temperatures. This has several advantages, including the suppression of other microbes that might contaminate the fermentation process, decreased energy requirements for cooling, and also greater efficiency in distillation of biofuels such as ethanol and butanol. The goal

is to utilize stable, high-temperature enzymes that will increase the process efficiency, minimize contamination and facilitate the isolation of purified fuel product by evaporation.

The research conducted at UMBI is one component of a broader effort taking place at the Energy Biosciences Institute, a partnership between BP, the University of California, Berkeley; the Lawrence Berkeley National Laboratory; and the University of Illinois.

More information can be found on the project web page at:

http://www.energybiosciencesinstitute.org/index.php?option=com_content&task=view&id=153&Itemid=20

About UMBI:

With research centers in Baltimore, Rockville, and College Park, UMBI, the University of Maryland Biotechnology Institute, is the newest of 13 institutions forming the University System of Maryland. UMBI has more than 60 ladder-ranked faculty and a mandate to advance the biotechnology economy while preparing a well-equipped workforce. Celebrating more than 20 years of service to Maryland and the world, UMBI is led by microbiologist and former biotechnology executive Dr. Jennie C. Hunter-Cevera.

For more information visit www.umbi.umd.edu .

About the Energy Biosciences Institute:

The Energy Biosciences Institute is the world's largest public/private consortium dedicated to the application of biosciences to the energy sector. Projects are being supported at all three of the public partner institutions: the University of California, Berkeley; the University of Illinois at Urbana-Champaign; and Lawrence Berkeley National Laboratory.

The international energy company BP is funding the decade of work with \$500 million. By applying bioscience and biotechnology techniques to the energy industry, EBI will seek to develop the methods and technologies that will enable the transition from a fossil fuel-based energy economy to a balanced portfolio relying more upon renewables and cellulosic or algal biofuels with greatly reduced environmental impacts.

Research is being pursued in four categories related to exploring the opportunities for production of cellulosic biofuels, feedstock development, biomass depolymerization, biofuels production, and the socio-economic impacts of cellulosic biofuels development. A second initiative, concerned with fossil fuel bioprocessing, is expected to receive funding later this year.

For more information visit www.energybiosciencesinstitute.org .

###