

JBEI

Joint BioEnergy Institute

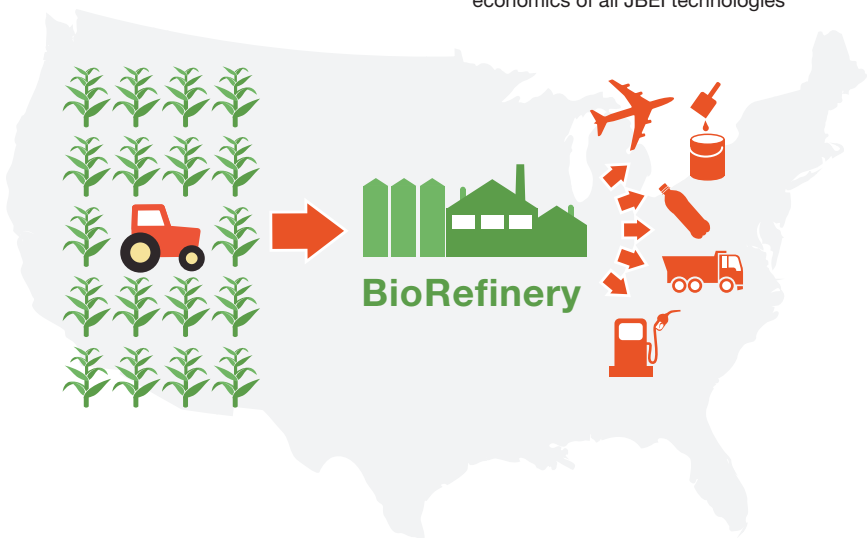
The Vision

The vision of the Joint BioEnergy Institute (JBEI) is that nonfood bioenergy crops can be converted into economically viable, carbon neutral, biofuels and bioproducts currently derived from petroleum, and many other bioproducts that cannot be efficiently produced from petroleum. JBEI's mission is to establish the scientific knowledge and new technologies in feedstock development, deconstruction and separation, and conversion needed to transform the maximum amount of the carbon available in bioenergy crops into biofuels and bioproducts.

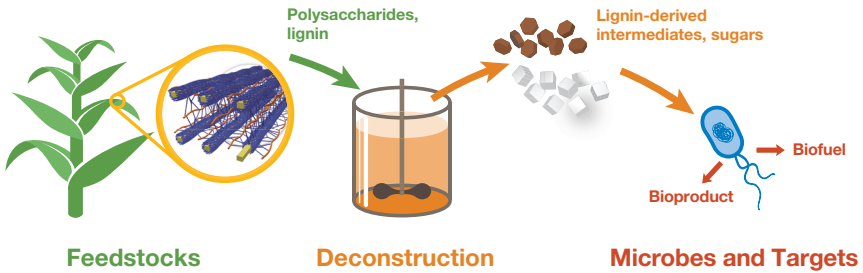
JBEI's discoveries will serve as the foundation for technologies that will reduce the nation's dependence on fossil fuels, significantly reduce the amount of carbon added to the atmosphere, reduce contamination of the environment, and provide the scientific tools and knowledge required to transform the bioenergy marketplace.

JBEI will develop:

- bioenergy crops (sorghum, switchgrass and poplar) engineered to have low susceptibility to disease and drought that can be readily deconstructed into sugars and lignin-derived intermediates
- an integrated, feedstock agnostic deconstruction process using biocompatible ionic liquids that liberate high yields of sugars and lignin-derived intermediates suitable for biological conversion
- microorganisms (primarily *Pseudomonas putida*) engineered with a metabolism to simultaneously utilize the majority of the sugars and lignin-derived intermediates resulting from the deconstruction process and produce a variety of biofuels and bioproducts at industrially relevant titers, rates and yields
- new technologies and methods to meet current & future needs in biofuels research by increasing sample throughput, decreasing reagent use, increasing measurement fidelity and reducing assay time
- life-cycle and technoeconomic models to assess sustainability and economics of all JBEI technologies



JBEI Biofuels & Bioproducts Pipeline



Industry Partnerships

As a DOE Bioenergy Research Center, JBEI serves to catalyze fundamental scientific discovery and innovation for the development of commercial products and new conversion technologies that will benefit the U.S. bioenergy and bioproducts industry. JBEI's Industry Partnership Program provides companies with the opportunity to become a part of the JBEI research community as well as an effective means to license JBEI technologies.

Education & Outreach

JBEI promotes interest in science through educational outreach programs with students and the general public. These programs include internships, seminars, and collaborations with academic, namely UC Berkeley's Lawrence Hall of Science, and industry-based scientific institutions. JBEI will continue to expand its educational outreach programs by working with research institutes, universities, national laboratories, and the other DOE Bioenergy Research Centers — the Center for Advanced Bioenergy and Bioproducts Innovation, the Center for Bioenergy Innovation and the Great Lakes Bioenergy Research Center.



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