

Bioenergy Research Centers at a Glance



Center for Advanced Bioenergy and Bioproducts Innovation | cabbi.bio

The Center for Advanced Bioenergy and Bioproducts Innovation (CABBI), led by the University of Illinois at Urbana-Champaign, is developing efficient ways to grow, transform, and market biofuels and other bioproducts by integrating recent advances in genomics, synthetic biology, and computational biology to increase the value of biomass crops. CABBI represents a transformative research model designed to accelerate bioproduct development while retaining the flexibility to assimilate new disruptive technologies, regardless of their source. The center aims to develop the predictive capability to determine which feedstock combinations, regions and land types, market conditions, and bioproducts have the potential to support the ecologically and economically sustainable displacement of fossil fuels.

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Center for Bioenergy Innovation (CBI) | cbi.ornl.gov

The Center for Bioenergy Innovation (CBI), led by Oak Ridge National Laboratory, seeks to accelerate domestication of bioenergy-relevant, non-model plants and microbes to enable high-impact, value-added coproduct development at multiple points in the bioenergy supply chain. In this endeavor, CBI is pursuing a host of new technologies to alleviate critical cost barriers facing the emerging bioeconomy. Specifically, the center is creating robust, high-yielding feedstock plants using genetic technology and bioengineering; developing biocatalytic methods for high-yield production of advanced biofuels that can be blended with existing transportation fuels; and studying ways to produce valuable byproducts from lignin left over after biomass processing.

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Great Lakes Bioenergy Research Center (GLBRC) | glbrc.org

The Great Lakes Bioenergy Research Center (GLBRC) is a cross-disciplinary research center led by the University of Wisconsin-Madison. With Michigan State University and other partners, GLBRC is developing sustainable biofuels and bioproducts from dedicated energy crops grown on marginal lands. GLBRC has three integrated areas of research – sustainable cropping systems, efficient biomass conversion, and field-to-product integration – that together will help replace petroleum-derived fuels and products and enable a new generation of biorefineries. GLBRC's mission is simple: to create biofuels and bioproducts that are economically viable and environmentally sustainable.

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Joint BioEnergy Institute (JBEI) | jbei.org

The Joint BioEnergy Institute (JBEI), led by Lawrence Berkeley National Laboratory, is working to convert bioenergy crops into economically viable, carbon-neutral biofuels and renewable chemicals currently derived from petroleum, and other bioproducts that cannot be efficiently produced from petroleum. Ultimately, JBEI aims to advance basic understanding of plant cell walls, biomass recalcitrance, and microbial physiology; to establish predictive biosystems design tools for plants, microbes, and enzymes; and to develop technologies for feedstock-agnostic deconstruction, coproduction of fuels at less than \$2.50 per gallon, and production of drop-in fuels and novel bioproducts.

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Enabling Commercialization, Creating Opportunity

The BRCs are enabling a new generation of biorefineries and developing a portfolio of new bio-based products, methods, and tools for use in the biofuels industry. Using a broad range of genome-driven research methods, BRC technologies represent a variety of approaches to different bottlenecks in the current biofuel pipeline. Some technologies focus on improved ways of breaking down biomass for conversion into fuel, some on engineering plants with the characteristics most advantageous for biofuels, and still others on creating bioproducts that can help make advanced biofuels economically viable. In total, the BRCs have successfully launched 19 start-up companies, disclosed well over 600 new inventions, and optioned or licensed out hundreds of technologies.

"These inventions will be the new startups, the new fuels that will be in our tanks, the renewable materials in our lives, and the manufacturing jobs in America."

- Jay Keasling, Joint BioEnergy Institute (JBEI) Chief Executive Officer